Bowman Lecture

ON THE

ABANDONMENT OF IRIDECTOMY IN THE EXTRACTION OF HARD CATARACT.

Delivered before the Ophthalmological Society of the United Kingdom on June 9th, 1893.

BY T. PRIDGIN TEALE, M.A., F.R.S., F.R.C.S. ENG., M.B. OXON.,

CONSULTING SURGEON TO THE GENERAL INFIRMARY AT LEEDS.

INTRODUCTION.

Mr. PRESIDENT AND GENTLEMEN,—When invited by the Council of the Ophthalmological Society to deliver the Bowman Lecture, although naturally shrinking from the effort which such a responsible work entails, I felt that it would not be right to decline. The invitation conferred an honour which it would have been ungracious to put aside and imposed a responsibility which perhaps it would have been cowardly to shirk. It is an honour to one who has been engaged in general surgery during the whole of his professional life to be invited to lecture before this Society, especially as being the first personal friend of Sir William Bowman who, since the latter's death, has been invited to give the lecture instituted in honour of him whose memory and example we all cherish and revere and by whom from my student days I was welcomed to the most intimate friendship and to constant professional intercourse. May I not be allowed on such an occasion to give some personal reminiscences of him who has so recently passed away from us in full mental activity and with undiminished interest in everything scientific which bears upon our work? Moreover, there is perhaps a certain fitness in my undertaking this task, seeing that I am one of the very few now living who have witnessed from beginning to end the great modern revolution in ophthalmic science of which Sir William Bowman *pars magna fuit*. It is well-nigh forty years since a small band of ophthalmic students were busily at work with Bowman and Critchett at Moorfields Hospital in the earliest studies with the ophthalmoscope. I recall Hulke, whom I succeeded as Bowman's clinical assistant, George Lawson, Edward Liveing, Jonathan Hutchinson, Warlomont of Brussels, and those gone from us—Anstie, Soelberg Wells and W. H. Stone of St. Thomas's Hospital. This was, indeed, the commencement of a new era and started us who were beginners on a career full of intense interest and promise. Parallel with the discoveries by the ophthalmoscope there came an immense impulse to ophthalmic surgery. Extraction of cataract by the old semilunar flap in the skilled hands of Bowman and Critchett and others had been brought to a perfection of dexterity such as the present generation can hardly conceive. Imagine, if you can, the surgeon making a large semilunar flap of the upper half of the cornea in a nervous patient with a sensitive conjunctiva and powerful orbicularis, with no speculum to steady the lids, no forceps to steady the eyeball, no cocaine to numb the conjunctiva and cornea and no chloroform or ether as a general anæsthetic. Chloroform was then deemed unsafe on account of the risk of vomiting, and ether had not been restored to British practice. Many a time did I assist Bowman in such extractions and I cannot recall either a wound of the iris or the loss of vitreous humour. Extraction of cataract was then the highest point of our young ambition and great was the competition amongst us to practise at the necropsies at King's College Hospital. I still possess the Beer's knife and still use the curette-cystotome of those days, the latter being better in form than modern modifications. Keratonyxis, the slow process of absorption by needling, was the only method of dealing with soft cataract, requiring numerous operations and many weeks in time. Iridectomy was undiscovered, we knew nothing of hypermetropia, astigmatism was hardly dreamed of, test glasses were but a series of convex and concave spectacles in frames, and test types were strips cut out of books and newspapers pasted on a board. Then followed the great discoveries. Year by year, when I visited London, Bowman gave me a short clinique on each as it arose—first on iridectomy for glaucoma, fresh from its promulgation by Graefe at the Ophthalmological Congress at Brussels. Later he explained to me hypermetropia and later still astigmatism, and thus started me to work at each of these new departures. Not less remarkable than the way in which he imparted this knowledge to me was the manner in which he questioned me on my own work and on my new ideas in treatment or practice. These he listened to and discussed and not unfrequently put to the test of experience. Within a few days of my telling him of my work on extraction of cataract by suction and showing him my first suction curette he adopted the principle, had a special syringe made and used it in the extraction of soft cataract. When in 1860 I wrote a paper on his method of treating lacrymal obstructions and suggested bulbed probes instead of his probes of uniform calibre, he had bulbed probes made and even carried the principle further than I had done by using bulbs even double the size I had suggested. All this goes to illustrate what is so well known of him, his absolute truthfulness and single-mindedness and the earnest scientific spirit in which he approached every question bearing upon his work. As a further illustration of the calm nobility of Bowman's character, I may quote from a letter in answer to one of mine, in which latter, whilst congratulating him on the titular honour then recently conferred, I expressed regrets, which he well knew that I felt, that circumstances had in the end turned him completely aside from general surgery, a diversion which I have always felt to have been a grievous loss to British surgery. His words were: "I am receiving many (letters) which assure me that the profession approve of my acceptance of the honour—to me an immense enhancement of it. It came as a complete surprise, as I have never thought myself as in the running in that field. The cast of my life has been the sport of circumstances which have befallen as they chanced. I have only wished to make the best of them as they came. The ophthalmic field was entered on gradually, being vacated by sad losses by death. The public found me out. I could not have long followed both departments. I have no reason to regret what has befallen and have the reposeful thought of never having fretted about what was of really very little importance."

CHOICE OF SUBJECT.

Let me now consider how best to employ the time during which it is my privilege to address you. Two courses seem open: either to give a *résumé* of recent work done by others so as to bring up our knowledge of the progress of ophthalmic science to the level of the present day; or to give you some conclusions on points in ophthalmic practice at which I have arrived during my professional life. For the former course I have neither time nor inclination nor aptitude. I trust, therefore, that the second may be not unacceptable nor deemed a waste of time. There are two subjects on which I have endeavoured to influence the practice of ophthalmic surgery—viz., the "treatment of soft cataract by suction" and the "abandonment of iridectomy in the extraction of hard cataract." On the first I have published little of importance since the earlier years of its introduction to the profession twenty-nine years ago, so that many of the present and rising generation of ophthalmic surgeons are perhaps hardly aware of the rules and principles laid down as guiding and rendering safe the practice. It is not, however, my intention to make use of the present opportunity to repair the omission and reaffirm the principles. On the abandonment of iridectomy in extraction of hard cataract I have spoken or written on several occasions, but have never given an authoritative description of rules to be followed in the operation I advocate or of that which I deem to be its cardinal point—viz., the exact method of making the incision. In fact, the whole question of the abandonment of iridectomy seems to me to hang upon the exact incision that shall be selected. Those who fall back upon the old semilunar flap and Beer's or Sichel's knife and carry their incision close up to the sclero-corneal junction will hesitate and doubt whether they have not landed themselves in greater difficulties and disadvantages than were involved in the operation with iridectomy. On studying the records of operations for cataract in my private practice—the only records which are practically available—I find that up to the year 1863 my only operation for removal of hard cataract was the original method by semilunar flap made with a Beer's knife or Sichel's narrower modification. Then during the years 1866 to 1869 the forms of operation prevailing were those of Graefe or Graefe-Critchett, of which unfortunately I have no sketch, but which consisted, I believe, in extraction without iridectomy, in which Graefe's knife and incision were used. Thereupon the old semilunar

flap reappeared, and finally in 1871-72 I definitely adopted the form of operation entered in my earlier notes as a shallow flap, which it is my aim to describe to-day, Graefe's operation with iridectomy being reserved for exceptional cases. With the "old flap" my results were very satisfactory indeed; with the modified operations combined with iridectomy they were less satisfactory on the whole; but what unsettled my mind more than anything was the fact that in two or three cases, in which the operation was as perfect as I could make it, the eye went wrong and sight was either lost or the result was very imperfect. About the same time the late Mr. Critchett and Dr. Liebreich were extracting without iridectomy. They were, I believe, making incisions well within the cornea, sometimes an upper section, sometimes a lower section, with a narrow Graefe's knife, such as had been used for linear extraction of soft cataract. The incision was in the main linear, with puncture and counter-puncture in the sclero-corneal junction. The example of Mr. Critchett and Dr. Liebreich and my own dissatisfaction with the iridectomy extraction led me by degrees to adopt as a settled practice the form of incision which I shall describe as the one which I have steadily employed in a large majority of cases during the last twenty years.

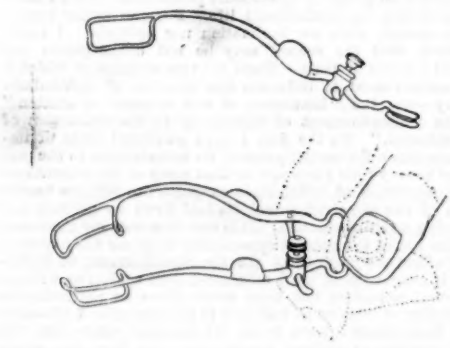
DETAILS OF THE OPERATION OF EXTRACTION BY SHALLOW FLAP.

The Society will, I trust, pardon me if I enter somewhat minutely into the details of the operation, partly as a guide to those who may be disposed to adopt the method herein recommended, partly as a pattern which others may take for an interesting comparison with the details they themselves employ, but chiefly because of my conviction that in surgery as a whole, be the principles of an operation ever so good, success is frequently not obtained owing to the imperfect carrying out or the inadequate selection of detail.

1. *Antiseptics.*—Carbolic acid still maintains its supremacy in my surgical work. The eyelids, eyelashes, conjunctiva and conjunctival recesses are well cleansed with a solution of three minims to the ounce, a little more than ½ per cent., in which also all instruments except the knife are soaked.

2. *Anæsthesia.*—Cocaine is employed exclusively. For this purpose the drops to be used are specially prepared just before the operation. A small tube containing a grain of sterilised cocaine receives ten minims of distilled water, and this is instilled into the eye once or twice.

FIG. 1.

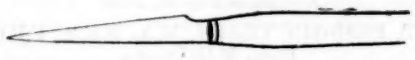


3. *The lid-holder.*—This is a spring speculum of a pattern which was brought to me from the Continent about twenty years ago. It is large, strong and well curved, and yet it allows ample room for the finger and thumb of an assistant to hold it firmly and by means of it to control the eyelids and defend the globe from injurious pressure or spasm of the orbicularis. The spring speculum, having been introduced, is put in charge of a competent assistant.

4. *Fixation of the eyeball.*—The surgeon then by means of conjunctival forceps with broad teeth takes hold boldly of the conjunctiva and subconjunctival tissue about three millimetres below the cornea, rolls the eye downwards and commences the incision.

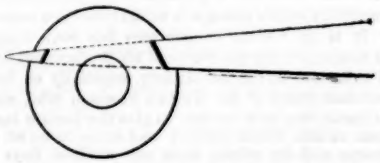
5. *The knife.*—My earlier shallow flap operations were made with the narrow Graefe's knife. This in my hands was not quite satisfactory, as I could not easily retain the aqueous humour up to the moment at which the knife edge reached the posterior surface of the cornea and so sometimes the iris was washed over the edge and wounded. Some of my friends have succeeded with Graefe's knife. I, however, did not acquire the knack of using it to my satisfaction and therefore fell back upon the long narrow knife of Sichel, which by its wedge shape retains the aqueous up to the moment at

FIG. 2.



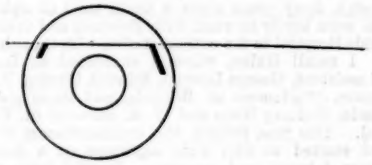
which its edge is turned forwards against the cornea.[7] For the last three or four years I have used a still narrower form of Sichel's knife suggested by and made for Mr. R. N. Hartley, which is almost identical with Taylor's marked No. 822 in Weiss's catalogue. This has proved to be admirable for the purpose, combining the wedge principle of Sichel with a close approximation to the narrow Graefe.

FIG. 3.



6. *The mode of incision.*—The point of the knife enters the cornea just within the outer margin at its equator and emerges at a counter-puncture just within the inner margin of the cornea at a level about two millimetres above the equator. As soon as the counter-puncture is well accomplished and the point of the cataract knife has passed out of the cornea to the extent of about four millimetres the next step is taken. This

FIG. 4.



is the most critical part of the operation. The knife is somewhat rapidly and with a sort of knack turned directly forwards so that the blade, which up to this point has been parallel with the iris, comes to a right angle with the back of the cornea. The section is completed by cutting directly forwards, this final cutting being vertically through the corneal thickness, absolutely linear and in position about midway between the horizontal equator and the upper margin of the cornea. The knack of this part of the operation consists in so managing the knife that, as soon as it is turned from a plane parallel with the iris, in which by its wedge shape it retains the aqueous humour, to a plane vertical to the back of the cornea, which at once allows the aqueous to escape, the edge of the knife shall rapidly reach the posterior surface of the cornea and be in contact with it before the iris can fold over its edge. Whilst this final part of the incision is being made an assistant controls the eyelids by the speculum, holding them slightly off the eyeball so as to avert any sudden pressure on the globe during the completion of the incision. The incision thus made is practically a shallow flap, chiefly linear, with a small limb at an obtuse angle corresponding to the heel of the knife at the outer edge of the cornea, and a still smaller, hardly perceptible limb corresponding to the point of the knife at the inner edge of the cornea. At the limbs the knife passes through the cornea obliquely, but in the horizontal linear part it cuts vertically through the corneal structure.

7. *The section.*—I always make the section in the upper half of the cornea, using the right hand for the right eye and the left hand for the left.

8. *Extraction of the cataract.*—The operation is completed as follows. Whilst the assistant continues to control the eyelids by the speculum, the operator, still keeping a grip of the conjunctiva below the cornea, so presses the holding forceps against the eyeball as to steady the lens towards the cornea whilst he ruptures the capsule with the cystotome. By this manœuvre he avoids the risk of damage to the suspensory ligament by pressure of the cystotome. After the rupture of the anterior capsule the delivery of the lens is effected by the mutual manipulations of the two hands, the one maintaining the conjunctival hold with the forceps below whilst the other exercises pressure above the cornea by the

FIG. 5.

convex surface of the curette. By this means, and more especially by the pressure of the curette just above the cornea, the upper edge of the cataractous lens is made to present itself through the pupil and wound, and a very slow gradual delivery can be accomplished by the combined or alternated pressure of forceps and curette. Great pains are taken to remove by the curette any remnants of the cortical portion of the lens, so as to completely cleanse the anterior chamber and the conjunctiva of all débris.

9. *Dressing of the eye.*—The spring speculum is only now removed. The eyelids and eyelashes are then smeared with vaseline, over which iodoform is dusted. A pad of absorbent cotton-wool with an outer layer of black cotton-wool is applied to each eye and made firm with strapping. I have for many years discarded every form of bandage, as having no advantage over adhesive strapping (except for men with a very hairy face) and as having the serious disadvantage that if there be any swelling of the eyelids there is no yielding and therefore a possibility of injurious pressure. If all goes on well, and if there is but little pain and little watering of the eye so that the pad remains dry, I leave the eye undisturbed and unlooked at until the eighth day, when I change the pad of the eye that has been operated upon and remove the pad from the other.

I have gone thus minutely into the steps of the operation in the belief that if we are to have improved results by the abandonment of iridectomy it will not be by returning to the old semilunar flap nor by incision at the sclero-corneal junction, but by reducing the incision to as near an approach to linear extraction as the integrity of the iris and the bulk of the cataract will permit. The incision I have described has proved to me a faithful servant and will, I trust, prove to be so to others, until a better method can be invented. The advantages of the incision above described are as follows: *a.* In as far as it approaches the flap operation, it possesses with that operation the advantage of extrusion of the cataract without any cutting of the iris. In as far as it approaches the linear it obviates to a great extent the disadvantages of the flap which were the great liability to serious prolapse of the iris and to the displacement of the flap by the upper eyelid. *b.* The position of the greater part of the incision across the middle and not at the base of the iris allows the lens more readily to present at the wound as there is less of the body of the iris to be displaced. *c.* The greater part of the wound being linear and vertical to the corneal thickness, as soon as the lens has escaped and all cortical matter has been removed the wound closes absolutely and the edges fit, leaving a level surface which permits early sealing of the aqueous chamber. *d.* The greater part of the wound being away from the base of the iris and rather towards the pupil, there is a remarkable facility for the escape, or rather the extrusion, of cortical portions of the lens, the reason for which is discussed later. *e.* The incision being entirely in the cornea and away from the ciliary region, there is probably much less risk of irido-cyclitis or of subsequent glaucoma. The knife is made by Weiss; the spring speculum (Graefe's) is made by Down Bros.; the cystotome-curette—the original Moorfields Hospital pattern—is also made by Down Bros.; the conjunctival forceps (Schmidt-Rumpler) is made by Messrs. Krohne and Sesemann (Catalogue, 3993).

TEARING (DISCISSION) OF OPAQUE AND CRUMPLED POSTERIOR CAPSULE AND ITS RISKS.

There is, according to Landolt, great diversity of opinion as to the danger involved in needling the posterior capsule. Knapp and others consider it absolutely without danger if done with proper precautions, wherens a large number of operators only do it when compelled because it is occasionally followed by irido-cyclitis or panophthalmitis. The question is of considerable importance and amounts to this: Are we, with those who fear bad results, to rest content with second-rate vision from an opaque capsule, or shall we, with Knapp, freely give such cases the chance of good vision, venturing a certain amount of risk? And what is the degree of risk? Judging from my own experience I should say that the risk is small, as I have rarely had any trouble in consequence. A more important question is, What is the nature of the risk? This I believe to be in its beginning increased tension, which unrelieved may in some instances drift into irido-cyclitis or panophthalmitis. How are we to deal with this increasing tension? This is an interesting point and one which, perhaps, is not so fully appreciated as it deserves to be. Let me illustrate it by two cases which recently happened in my practice. In both instances I tore with needles the opaque posterior capsule: the one after an extraction of traumatic cataract by suction, the other after an extraction of hard cataract by a shallow flap. Within forty-eight hours each patient suffered intense pain and dimness of vision from increased tension. On the third day in one case and on the fourth in the other I punctured with a broad needle through the upper part of the cornea and through the iris into the vitreous humour. The needle, turned sideways, allowed a few drops of vitreous humour to escape. In a quarter of an hour, in each case, intense agony was converted into perfect ease. There was no relapse of pain or of increased tension, and in a fortnight the subject of the extraction of hard cataract read J. 2. If unchecked both cases would most likely have ended in panophthalmitis. All I know about the foregoing method of dealing with such cases is this. In the year 1864 when in London I told Sir William Bowman of a case of extraction by the semilunar flap which was causing me anxiety because, after discission of the capsule, it was falling off in condition on account of increased tension. He told me of the simple plan of puncture with a broad needle "through the iris into the vitreous humour." As soon as I returned home I acted upon this advice; normal tension was restored and vision was saved. I have now and then repeated the proceeding, though only rarely, but the two instances I have named occurred within the last six months.[1]

THE LESSONS TO BE DEDUCED FROM A SERIES OF CASES.

Let me now read the lessons of my own experience by analysing, as far as my notes will permit, the last 100 cases. These notes are less complete than I could wish, not having been taken with any view to publication, and are sometimes defective from the omission to record the final result in vision. Yet we may deduce from them at least certain broad lessons which are of use in estimating the value of the operation employed.

1. *Anæsthetics.*—Of the 100 cases the first 4 were under ether; all the rest were under cocaine.

2. *Iridectomy.*—In 10 a preliminary iridectomy was performed and in 1 an iridectomy at the time of operation, leaving 89 operations without iridectomy. Of the 10 cases of preliminary iridectomy 5 were done in order to artificially ripen immature cataract. The other cases were as follows: (1) A feeble woman with diabetes; (2) a woman with only one eye; (3) a man aged eighty-four recently recovered from pneumonia; (4) an old man with subacute glaucoma; and (5) a man in whom the lens had been forcibly dislocated by a quack, with consequent glaucoma.

3. *Accidents at the time of operation.*—Out of the 89 shallow flap operations the vitreous was lost in three instances, in all of which there was a fluid vitreous, implying defective suspensory ligament. In two cases the iris was grazed by the knife. The remaining 84 are recorded as without accident—i.e., the operations were completed without a flaw. There is not a single record of dislocation of the vitreous from damage to the suspensory ligament during the operation. On this point I shall say more presently.

4. *Failures.*—In the 89 cases there were six failures. One occurred in the case of a drunkard; a second in a lady who

[1] I communicated this case to the Brit. Med. Jour., vol. i. 1864, p. 404.

had an outburst of hysterical weeping two days after the operation; in a third the iris was wounded; a fourth was in a man aged eighty-four, whose other eye was also lost after an operation combined with iridectomy; and the fifth and sixth failed without obvious cause.

5. *Subsequent iridectomy and artificial pupil.*—This is noted in 11 out of the 89.

In all these cases except two the resulting vision was good. Five read J. 1 easily; four are stated to have "good vision"; and two are recorded as "poor," reading only very large print, such as J. 18.

6. *Prolapse of iris.*—It is difficult to be quite certain in what proportion of cases this occurred, and I do not feel sure that every instance has been recorded. Probably the cases in which subsequent iridectomy was required represent the more serious instances of prolapse, and there have been a few cases with a small adhesion of the iris to the corner of the incision without serious prolapse.

7. *Glaucoma as a sequel to extraction.*—I can only recall one case. This may be explained, perhaps, by the fact that where a large prolapse occurs the case usually demands a subsequent iridectomy. The slighter occasional adhesions to the scar do not appear to produce glaucoma or to be any material disadvantage and are not to be looked upon as substantial objections to the shallow flap operation.

8. *Needling.*—Of the remaining 72 cases tearing (discission) of opaque or crumpled capsule is noted in 14 cases, which leaves 58 free from any secondary operation. Needling has, therefore, been an exceptional operation. That this is not a general experience may be inferred from a review of the new edition of Mr. Berry's work in THE LANCET of April 29th, 1893. The reviewer says: "As a matter of fact the operation of needling is almost always required if the patient desires to read ordinary type. Even when the lens has slipped out without leaving more than a trace of cortical substance the posterior capsule and membrane of the vitreous humour become wrinkled and seriously interfere with accurate vision of either near or distant objects." De Wecker, speaking of the iridectomy extraction, says: "In another class of cases the cortical masses left behind remain unabsorbed and the capsule becomes opaque in a few days. Afterwards capsulotomy or iridotomy often give excellent results." He considers "these complications to be less common after the simple extraction and that when they do occur the secondary operations are more successful than when extraction with iridectomy has been performed." The final results of the fourteen cases in which needling of the capsule was required are that ten read J. 1, one read $\frac{2}{3}$, another $\frac{3}{10}$, another is stated to have "very good" vision, and in the last case vision is not recorded.

9. *Retention of cortical masses.*—This difficulty seems to me to have disappeared under the operation by the shallow flap in which the incision is at a distance from the margin of the cornea; and there seems to be a reason for this. Take an illustration from hypopyon. If we try to let out the pus from the anterior chamber by making an incision at the margin of the cornea we find it very difficult to evacuate, partly no doubt from the iris presenting at and blocking the incision; but if we make an incision, especially a radial one, towards the centre of the cornea the pus and débris escape at once. The emptying of the anterior chamber allows the lens and iris to advance towards the cornea and to compress and empty the angle between the iris and cornea. So, in extraction of cataract by an incision away from the angle, the body of the vitreous presses forwards towards the back of the iris and forces the cortical portions of the lens away from the angle behind the iris into the pupil and so towards the incision. Hence the dealing with cortical portions of the lens ceases to be a practical difficulty under the operation by the shallow flap. Landolt and De Wecker both speak of retention of cortical masses as if such retention were not uncommon and as if the dealing with them were a serious practical difficulty.

10. *Dislocation of the vitreous humour.*—This is a point of considerable moment in extraction of cataract. It occurs in cases in which the vitreous humour is healthy and is caused by straining of the ocular muscles during the operation, whereby the upper portion of the suspensory ligament is damaged so that the unprotected vitreous bulges against the back of the iris and forces the latter between the lips of the wound, interfering with proper fitting and making it gape. This, no doubt, is what Knapp of New York refers to when he advises an iridectomy "whenever there is a tendency to prolapse and it is difficult to replace the iris." Fuchs of Vienna made the same remark to Mr. H. Secker Walker of Leeds, to whom I am indebted for extracts from foreign journals bearing upon the question of retention or abandonment of iridectomy. In my series of 89 there is not one instance of damage to the suspensory ligament or of a single case in which there was any difficulty in replacing the iris. I attribute this immunity in a great measure to the use of cocaine, which allows very free manipulation of the eye without producing muscular spasm, combined with the support given to the base of the iris and the suspensory ligament by the portion of the cornea between the incision and the angle of the anterior chamber. There are two periods when this accident may occur. One is at the completion of the incision. This may be guarded against by the care of the assistant in charge of the speculum, who by judicious leverage of the thumb and finger can control and hold the eyelids away from the globe. The other is when the surgeon is using the cystotome for rupturing the anterior capsule and a certain amount of pressure is of necessity made upon the lens. This danger may be avoided by making the holding forceps which grasp the conjunctiva below the cornea so to press against the eyeball as to steady the lens towards the cornea and cystotome.

THE TENDENCY TO ABANDON IRIDECTOMY IN EXTRACTION OF HARD CATARACT.

Having been for many years convinced that for all but exceptional cases an operation involving iridectomy is not the best method of extraction of hard cataract, it has been a matter of interest to observe the increasing tendency of ophthalmic surgeons to move towards the same opinion. One of the earliest ophthalmic writers in England to publish a series of operations by a shallow flap without iridectomy was Mr. Snell of Sheffield, who was my assistant and house-surgeon in 1870–72 at the time when I was beginning to adopt the shallow flap and to abandon iridectomy. He tells me that of his last 200 extractions at the Sheffield Infirmary there were but thirteen combined with iridectomy, of which ten were preliminary to Forster's operation for immature cataract and two or three were accidental at the time of operation. In 1885 Galezowski began to operate without iridectomy. Of 1365 cases reported 1173 were without iridectomy, 179 with it and 13 with sphincterotomies (division of the circular fibres of the iris). In 1886 Knapp of New York began a series of operations without iridectomy, reporting 450 "simple extractions," against 371 cases "with iridectomy." In 1888 Professor Schweigger of Berlin began to abandon iridectomy, reserving it for special cases. Of 465 operations 400 were "simple extractions." De Wecker of Paris writes in November, 1892,[2] on "simple extraction" and the "combined operation." He says: "The extraction of cataracts with iridectomy is not—and M. Fuchs of Vienna agrees with us—the *safest*." ..... The "safest to avoid a large prolapse; yes, but there its advantages cease." He lays down the rule that "with a perfectly ripe cataract in a healthy patient simple extraction is the proper" operation to perform, but if "the cataract is not ripe, or the hygienic conditions are unfavourable, an iridectomy should accompany or precede the extraction." On the other hand, Landolt of Paris, having written to a large number of ophthalmic surgeons to ascertain their views on extraction of cataract at the present date, sums up in favour of extraction preceded by iridectomy. It is clear, therefore, that the confidence of ophthalmic surgeons in iridectomy as an adjunct to extraction is being seriously shaken and that opinion is ripening in the direction of some form of simple extraction. The operation of so-called "simple extraction" to which some have reverted is apparently the old semilunar flap with the incision close to or even within the sclero-corneal junction. It was in order to obviate the disadvantages of this "simple extraction" that Graefe invented his "linear extraction with iridectomy." It would seem, however, from published records that even with all its disadvantages the simple extraction by semilunar flap without iridectomy attains results equal to those obtained by Graefe's operation; but the exact method of operation which I am advocating differs essentially from both of these in that the incision is entirely within the cornea, almost linear, and yet without iridectomy. If I am right in advocating a method of operation which I have tested for so many years and which has been attended in a very large proportion of cases with most satisfactory results as to vision and comparative freedom from complications, as well as regards perfection of scar, pupil and anterior chamber, I

[2] Archives d'Ophthalmologie.

cannot but think that a surgeon who would give a full trial to the method described and the rules laid down would surpass, in visual results and in freedom from complications, his former successes with either the so-called "simple extraction" or the Graefe operation with iridectomy.

The Cavendish Lecture

ON

SOME CHANGES IN SURGICAL OPINION REGARDING THE DISEASES OF THE URINARY ORGANS.

Delivered before the West London Medico-Chirurgical Society,

BY HENRY MORRIS, M.A., M.B. LOND., F.R.C.S. ENG.,

SURGEON TO, AND LECTURER ON SURGERY AT, THE MIDDLESEX HOSPITAL.

MR. PRESIDENT AND GENTLEMEN,—Of the many changes in surgical opinions and practice during the last quarter of a century some have been due to the development of surgery under the threefold influence of anæsthetics, antiseptics and recent anatomical and pathological investigations; others to changes in fashion; and all, it will be conceded, to the persevering ingenuity of surgeons in perfecting every process and instrument employed for the alleviation of human suffering. Just as certain drugs, health resorts and stimulants become the fashion in medical practice, so do certain operations with surgeons; but such operations do not always prove to be superior to those they displace, any more than the last favourite drug or health resort or stimulant proves itself to be more beneficial than that which previously had been the mode. I shall have no difficulty in showing that one or other or both of these kinds of changes have materially affected the operative treatment of affections of each portion of the urinary tract. To begin with the excretory organs, the kidneys have of course been the subject of greater changes than any other part—for this reason, that the whole surgery of these organs has been formed within the last thirteen or fourteen years. Till then the kidneys were the domain entirely of the physician, but since then in respect of several of their affections they have passed over to the care of the surgeon. The late Dr. Robert Martin in writing to me on Jan. 10th, 1882 on the operation of nephrolithotomy said: "Dear old Lawrence used to begin one of his lectures with these words, 'The kidney, gentlemen, is fortunately beyond the reach of the surgeon,' and," Dr. Martin added, "I well remember the same great authority denouncing the pioneers of ovariotomy in no measured terms some thirty years ago. *Tempora mutantur.*" An instructive warning to us is this opinion of so great a master of surgery as Sir William Lawrence, handed down to us by a former assistant physician of St. Bartholomew's Hospital, in whose presence it was uttered. Benjamin Bell, Samuel Cooper, Chelius, Copland, Gross, Rayer, Rossetus, Syme, Velpeau and many others might be quoted as holding opinions as to the kidney in no essential particular different from that entertained by Lawrence; and yet to-day, in the face of such a phalanx of opposing judges several operations upon the kidney have become well-nigh universally recognised by educated medical opinion. I should like to be able to say "universally recognised by medical opinion," but I cannot do this, for within the last twelve months, when recommending an operation upon a lad who is doubtless carrying in his kidney, to his discomfort and detriment, a mulberry calculus, the mother of the patient replied that she could not consent to an operation because a physician had told her that an operation for stone in the kidney ought not to be thought of, as it had rarely been undertaken, and had always proved ineffectual or fatal. If the physician referred to really made such a statement (for I always doubt the correctness of such reports) one hardly knows to whom he rendered the greater injustice, to himself for being so ill informed, or to one of the most successful operations in surgery which he was ignorantly and harmfully disparaging. When once it was admitted that nephrectomy and nephrolithotomy were successful and curative, differences of opinion arose as to the best method of performing them; and with regard to nephrotomy for hydro- and pyo-nephrosis, whilst some think the operation should be done instead of, or at any rate as a preliminary to, nephrectomy, others are of opinion that nephrectomy as the primary operation is better suited for such cases. As to nephrectomy for tubercle and for malignant disease, opinions have greatly varied, but are now by degrees growing into accord. Opinions have, too, been divided as to nephrectomy for movable kidney, but they are now rightly becoming consolidated against so formidable an operation for a condition which can be successfully remedied by a much less severe one.

Floating or movable kidney is an entity about which the most divergent views have been and still are held. A few years ago it was gravely asserted by a distinguished surgeon that movable kidney was a myth; that it was a thing of no pathological significance; that the literature of the subject was based not on post-mortem experience but on clinical impressions which were fallacious; that the cases of supposed mobile kidney were in reality tumours of other organs—e.g., the gall-bladder, ovarian cystomata, and diseases of the head of the pancreas; that in the few cases of mobile kidney recorded as having been observed at post-mortem examinations the condition had not been suspected during life; and that a righteous scepticism ought to be entertained as to movable kidney being the cause of real suffering. Somewhat similar doubts were suggested, if not actually expressed, at a recent meeting of the Royal Medical and Chirurgical Society, when Mr. Bruce Clarke read a paper on Acute Renal Dislocation. Two of the speakers referred to the rarity of movable kidney in the post-mortem room, and one stated that though he had made 4000 post-mortem examinations he could remember but two cases of movable kidney. A third speaker, who has contributed to our knowledge of actual cases of the sort, attached but little importance to the clinical effects of movable kidney, for he said: "Women who are the subjects of this condition suffer from a little occasional dragging pain in the side, but otherwise usually have no symptoms." Many, too, consider that the wearing of a belt is all that is requisite to relieve what little inconvenience is caused, that nephrorrhaphy ought not to be performed, and never succeeds; and lately it has been prognosticated that in a few years we must expect to hear of renal calculi having developed upon the sutures used to transfix the kidney in this operation.

On the other hand, the opinion is held that movable kidney is an every-day experience in practice, that a very large minority of women are thus constituted, and that it is by no means uncommon in men. I hear of patients being told on no account to submit to nephrorrhaphy—firstly, because it is very dangerous, and, secondly, because it is unnecessary for a condition with which 20 per cent. of the human race pass through life. In 1888 Dr. Lindner, a German physician, brought out a work on the "Anatomy, Etiology and Diagnosis of Floating Kidney in Women," in which he boldly declares that this condition is the most frequent anomaly in the female, that one woman out of every five or six is the subject of it, and that he is prepared to face the most violent opposition in support of his assertions. Laudau, Skorezewsky, Roberts, Newman and many others might be quoted as authorities on the question of movable kidney. Surely on a matter of fact of this kind it is time that the professional mind arrived at a definite and decisive conclusion. There is abundant evidence existing in support of it, and for the last 200 years at least authorities of the highest repute have recorded well-authenticated cases, whilst the report of the committee of the Pathological Society of London in 1876[1] ought to have placed the matter beyond dispute.

One reason of the continued discussion is, I think, the attempts which have been made to distinguish between floating and movable kidney both by means of the anatomical relations of the peritoneum to the kidney, and by distinct clinical indications. This it is impossible to do, and it is undesirable therefore to try to associate different groups of symptoms with definite pathological or anatomical states and to call them by such terms as "floating" as distinct from "movable," "subserous" as distinct from "interserous," and "dislocated" as distinct from "displaced."

Whilst preserving the terms "misplaced" or "displaced" for the kidney which is permanently occupying an

[1] Transactions of the Pathological Society, vol. xxvii., p. 467.

abnormal position, the word "movable" alone suffices to cover all cases in which the kidney from time to time shifts from its normal position but can be made to return by some movement of the bowels or of the body of the patient or by the hand of the surgeon. In justification of this simple classification let me state (1) that some of the most movable kidneys, those which float quite up to the front wall of the abdomen, cause no pain or other subjective symptom, and have no mesonephron; (2) that some of the cases in which the symptoms are most severe, most frequently recurring, and most likely to be mistaken for renal calculus, rarely and sometimes never can be detected by clinical examination as movable. It is only since surgical explorations of the kidney have been made that this form of movement, which I have elsewhere spoken of as "cinder shifting," has been shown to exist and to be the cause of very acute suffering. I have repeatedly in the operating theatre pointed out how a kidney can be moved around the tip of the fixed index-finger in every direction upon the plane of the loin, though it cannot be made to fall away from the back of the trunk even by rolling the person over on his face. Some of these cases have been explored in the belief that renal calculus was the cause of the symptoms; others, owing to the experience thus obtained, were diagnosed correctly, and nephrorrhaphy was performed with the most satisfactory results.

Another reason for the doubts which have been expressed as to movable kidney is the frequency of errors in diagnosis whereby movable tumours of various kinds have been mistaken for movable kidneys. Mr. Lawson Tait told us some time ago that out of thirteen supposed movable kidneys which came under his notice seven turned out to be gall-bladders enlarged by dropsy or gall-stones. A similar mistake is recorded in the *Medical Record* of Feb. 18th, 1883, and three instances of the same kind have come under my own notice. As they are very typical of their kind and have never been published I will briefly relate them now.

CASE 1.—A woman aged fifty-two for six months had felt very severe pain in the right lumbar region accompanied by flatulence and constipation. A fortnight before admission into a medical ward on June 10th, 1891, she had complete obstruction of the bowels for three days attended by vomiting and increased pain in the right loin. On the night before admission she was suddenly seized with pain so severe that she fainted and became quite cold; the abdomen became very distended and she vomited and retched for several hours. As soon as the abdominal walls were sufficiently flaccid a hard, oval-shaped tumour about four inches long and tender on manipulation could be easily made out. It was freely movable across the middle line and back again into the right loin; on tilting the patient towards her left side it occupied the umbilical region and reached as far as the left nipple line. The tumour also moved downwards with inspiration, was sometimes visible in the right half of the abdomen, and could be grasped between the hands when one was placed on the loin and the other on the front of the abdomen. The outline of the tumour was smooth. The margin of the liver could not be felt, and the outlines of that organ were normal on percussion. The urine was normal. I was asked to see the case with a view to performing nephrorrhaphy, but as I could not satisfy myself that the tumour was a movable kidney I suggested a preliminary examination under an anæsthetic. This was made, but as the majority of opinions inclined to the diagnosis previously arrived at, I consented to explore the right loin. The colon first presented itself; the peritoneum enveloped the tumour and was divided; one end of an elongated cyst was then brought into the wound and at the same time the lower margin of the liver was seen. It now became clear that the tumour was a greatly distended and very freely movable gall-bladder, so the wound in the lumbar peritoneum was carefully sutured, the loin wound closed, and three large faceted biliary calculi (110, 105 and 61 grains) were removed from the gall-bladder through an incision along the outer edge of the right rectus muscle.

The next case was communicated to me by Mr. Gifford Nash of Bedford, who described it as one of distended and movable gall-bladder resembling a movable kidney.

CASE 2.—A single woman aged sixty-four had for many years suffered from constipation, necessitating great straining. The bowels acted about once in ten days. For a year she had been losing flesh rapidly, and for two months she had had pain in the back, dragging pain in the right loin, abdominal discomfort and indigestion. In the position of the right kidney an elongated, freely movable, firm lump could be felt. This could be easily moved over the front of the spine, downwards towards the iliac fossa, and upwards under the ribs so that one lost touch of it. It was tender and rather larger than the normal kidney. The urine, which contained nothing abnormal, was passed once during the night and rather too frequently during the day. The lump was considered to be a movable right kidney, caused by straining during defæcation. A belt and pad were applied, but did not keep up the movable lump satisfactorily. On Aug. 1st, 1892, slight jaundice was noticed. The urine was deeply bile-stained and the jaundice very severe. Cancer of the head of the pancreas was diagnosed, involving the common bile duct. On Sept. 28th the liver was two inches, and on Oct. 28th four inches, below the ribs. The lump in the right loin fluctuated and fluctuation went right through to the ilio-costal space. It suggested a hydronephrotic tumour. It was dull on percussion, the ascending colon being displaced inwards. On Nov. 8th a trace of albumen appeared in the urine, and from the 23rd until death on Dec. 10th it contained large quantities of blood.—*Necropsy:* The pancreas was the seat of a cancerous growth which completely obliterated the common bile-duct. The liver was much enlarged, but no cancerous nodules were present. The gall-bladder and cystic duct were much dilated, the former being elongated and projecting four inches below the edge of the liver. At the junction of the gall-bladder and cystic duct there was a slight constriction. The gall-bladder was freely movable from side to side and to a less extent upwards and downwards. The cystic duct was blocked by an elongated, oval, crystalline-looking gall-stone weighing 160 grains. The gall-bladder contained about half-a-pint of clear watery fluid. The kidneys were not mobile and contained numerous secondary cancerous growths. The sigmoid flexure of the large intestine was much diminished in size.

The following case was brought under my notice by Mr. Herbert Budd, one of the surgeons of the Worcester Infirmary.

CASE 3.—A woman aged fifty-five was lifting a heavy weight when she felt something give way within her, and immediately afterwards detected a lump on the right side of the abdomen. Six weeks later, when she came under treatment, there was a large tumour in the right hypochondrium extending into the right lumbar and umbilical regions. It was freely movable, changed its position when the patient moved, and descended distinctly when she stood up. Pain, constipation and vomiting were complained of, but there was no jaundice and the urine was normal. Mr. Budd tells me that the swelling gave the impression of being a movable hydronephrotic kidney, but on exploring it through the right semilunar line it was discovered to be the gall-bladder greatly distended, and from it he removed two large gall-stones and several smaller ones. The patient made an excellent recovery.

Did time allow I could give details of two other cases, in each of which great pain and general disturbance of health were caused by a tumour which had been diagnosed as movable kidney. In both these patients the right kidneys were certainly movable, but it was not the kidney in either which formed the tumour and caused the suffering. In one the gall-bladder was quite movable as well as enlarged; in the other it was enlarged. In both before operating on the kidney I examined the gall-bladder and both patients have been greatly relieved by the extraction of biliary calculi. Forty-nine stones were taken from the gall-bladder of one, and two from the gall-bladder and one from the cystic duct of the other. Errors in diagnosis of this kind will be sometimes avoided by feeling whether the kidney is in its proper place or at any rate distinct from the tumour; by the presence of a resonant thickness between the tumour and the loin; by the inability to push the tumour quite back into the loin; by the lower edge of the tumour ascending an inch or more as it shifts to the left of the middle line; by the tumour having an attachment above which causes the lower border of it to describe the arc of a circle as it moves; by the want of the uniform outline and notch of the kidney; and by the absence of the peculiar greasy or slippery feeling which movable kidneys generally have.

The above cases are as important in their bearing on the diagnosis of diseases of the gall-bladder as of movable kidney. There is an impression that a distended gall-bladder, though movable in a degree, cannot be shifted over to the left of the median line or in a vertical direction. In Cases 1, 2 and 3 the vertical movement was specially noted, and in Cases 1 and 2 the movement to the left of the median line was very considerable. I draw attention to this mobility of the gall-bladder because I was last summer in consultation with two very eminent

consultants upon a case of large post-nephric abscess, on the front surface of which the right kidney was freely movable. We were all agreed as to the nature and treatment of the case; but in considering possibilities as to the moving body one of these distinguished men remarked that the gall-bladder was quite out of the question because of the vertical and free left lateral movement of the solid body we felt.

The cause of another though much rarer error is floating spleen. Mr. J. Bland Sutton read before the Clinical Society last December a case of excision of a floating spleen with axial rotation. The spleen was for a time mistaken for a movable kidney, but the error was corrected before any operation was undertaken by observing that the left kidney could be felt in its proper place by manual examination. Conversely, movable kidney has been mistaken for a movable spleen, as in the case recorded by Dr. Shattuck in the *Berlin Medical and Surgical Journal*.

A third reason for the doubts as to movable kidney is their phantom-like appearance and disappearance in many instances. In my student days and long afterwards much interest used to be excited from time to time by the admission of a case of so-called "phantom tumour," which, for want of a better understanding, was sometimes attributed to a localised spasmodic contraction of the muscles of the abdominal parietes; and it is probable that such contraction was often a very noticeable feature, for during the paroxysms of what Mr. Bruce Clarke would call "acute renal dislocation" I have sometimes seen the whole abdominal walls harden as in tetanus, and then in a few moments soften, to be followed by the contraction of some limited portion into a ball-like mass. I remember too that "phantom tumour" was spoken of in reference to a case which in 1874 formed the basis of a paper on Intermittent Hydronephrosis which I read before the Royal Medical and Chirurgical Society.[2] In this case the hydronephrosis was caused by a villous growth in the bladder, and the intermittent distension sometimes caused a large and easily detected tumour, whilst at other times nothing abnormal could be felt. Movable spleens, ovarian and other cystic tumours which discharge their contents into the peritoneal cavity or into one of the hollow viscera, but, more frequently than all, movable kidneys, cause these "phantom tumours," which at one time are distinct and at another subside almost or altogether to the vanishing point.

I could give details of many cases in which an examination of the abdomen from day to day has discovered nothing abnormal, and then on some occasion a tumour is most readily made out. Let me briefly refer to two such. A gentleman was sent home from India for operation for movable kidney. I examined him several times, but could find nothing of the kind. It so happened that he required an operation for phimosis, and I had therefore daily opportunity of palpating his abdomen, but with negative result. Several weeks afterwards he was seized with the same severe pains in his right loin and groin which he had experienced when in India, and on putting my hand on his abdomen I at once felt the movable kidney. Nephrorrhaphy was performed in November last. I saw him again on Monday, June 5th, when he told me that he had remained quite well ever since the operation. The second case was that of a lady who had been pronounced by Dr. Muret of Vevey and two or three other physicians to be the subject of movable kidney. She was a confirmed invalid, unable to take the slightest exercise. I made a most careful examination of the abdomen, but could detect nothing. A few days later I again examined the abdomen and immediately I placed my hand on the abdomen it came down upon the movable kidney. Had I hastily expressed an opinion from my first examination I should have said that this lady's kidney was not movable or misplaced.

As to the severity of the symptoms excited by movable kidney and the relief afforded by nephrorrhaphy, no one who has witnessed the severest form of renal colic, the great general disturbance of health, and the nervous anxiety caused by the feeling of dragging or of something dropping from the loin to the groin, all removed by merely stitching the kidney to the parietes of the loin—can any longer doubt either the reality of the suffering or the benefit derived from the operation. I have known one case in which the sufferings were so great that chloroform had to be administered on many occasions for hours in succession before she was relieved by nephrorrhaphy; and another instance in which the patient experienced so much benefit from the operation that she had the other kidney, which was also movable, treated in the same way, and with an equally satisfactory result. The curative effects of the operation are most gratifying if the sutures are made to pass into the kidney substance and the loose fibro-cellular capsule is shortened and stitched also to the muscles and fascia of the loin. M. Tuffier recently stated at the Surgical Congress in Paris, when speaking on the distant results of renal surgery, that in every case of nephrorrhaphy the result was perfect when the operation was clearly indicated.

Though the patient's life is never directly threatened by the mobility, it is so indirectly through the changes wrought on the kidney by the interference with the patency of its ureter and by compression of its bloodvessels and nerves, so that when discussing the treatment for movable kidney it ought not to be forgotten that such an organ, like a kidney which is irritated by a calculus, runs the risk of being destroyed by hydro-nephrotic or suppurative changes. To obviate this risk as well as to remove a cause of suffering and bad health nephrorrhaphy should be performed before these destructive processes have been allowed time to develop. This ought to be pointed out when recommending an operation either for renal calculus or for movable kidney, and I feel sure when this danger is realised by the profession it will be to the great advantage of our patients. It is often stated that a well-adapted belt is all that is requisite for movable kidney. I have not found it so. Belts, pads and trusses of all kinds are very unsatisfactory for this condition. They do not often effect any good; they much more often aggravate the suffering when not applied by the surgeon or an intelligent nurse. The proper application of a kidney belt and pad, like the proper application of a truss for hernia, requires that the viscus should be in place. A patient can readily reduce his rupture, but it is not so with the movable kidney; it is neither so easily reduced nor so easily retained in position after reduction, and patients often find that they suffer more with the belt on than off, and this is owing to its being applied over the unreduced kidney.

The advances in renal surgery include nephrotomy for certain cases of suppression of urine, and some success has followed the treatment. The cases of anuria which the surgeon is likely to be called upon to treat may be grouped under two heads: (1) mechanical anuria and (2) reflex anuria.

1. Mechanical anuria occurs after nephrectomy or after destruction by disease of one kidney; by the impaction in the ureter of the remaining kidney of a calculus, bloodclot or mass of muco-pus; by a growth in the bladder blocking the ureteral orifice; from kinking of the ureter of a movable kidney; or by the pressure on the ureter of some tumour, or the cicatrisation following pelvic abscess or pelvic cellulitis. 2. Reflex anuria, as one of the complications of urethral or urinary fever, has often been attributed to mechanical irritation of the urethra in front of the prostate. Opinions are at variance as to this view; but since the introduction of renal surgery it has been proved that a mechanical irritation in one kidney is a cause of total suppression in both. Thus, after a calculus has been extracted from the right kidney and a fistula has followed, complete suppression of urine due to a calculus in the left kidney has been relieved by extracting the left renal calculus, as shown by the escape of urine through the left side wound and through the right-sided fistula. James Israel[3] has recorded the case of a man aged forty-nine who for years had suffered from gout and right renal colic, and who at length was seized with left renal colic attended with total suppression of urine and caused by two stones impacted, the one in the renal pelvis and orifice of the ureter, and the other in the ureter a little lower down. As soon as these calculi were removed through a left lumbar incision both kidneys at once resumed their function, as was proved by the qualitative analyses of the urine passed through the bladder and through the left lumbar wound. To save life in such cases of anuria it is necessary to perform nephrotomy on the remaining or last obstructed kidney, and it is to be hoped that surgical opinion aided by those distinguished physicians who from the first have recognised the beneficial effects of surgery in certain classes of renal affections will soon cause the operation to be generally acknowledged by the profession as the proper treatment. This view is far from being at present generally accepted. In July last year I was called to see a gentleman aged forty-seven who had passed two or three calculi nine years,

[2] Transactions of the Royal Medical and Chirurgical Society, vol. lix.

[3] Deutsche Medicinische Wochenschrift.

and again a similar number four years previously. He had ever since had frequent pain in the right renal region. After two days of all but complete anuria he was seen by a physician, who, in reply to the question of surgical interference, said that no surgeon in his senses would dream of operating. I saw the patient late at night on the third day of anuria and recommended pilocarpine, jalap powders and vapour baths, and further advised that if no effective secretion followed thereupon nephrotomy should be performed. I heard nothing more until the seventh day of suppression, when I was again summoned at the instigation of Dr. Dickinson, who had that same afternoon seen the patient for the first time and had advised an operation, believing the anuria to be caused by calculous obstruction. But it was too late, for before I could reach the house the patient, after making a futile effort to pass water, became suddenly collapsed and died. In 1889 I was called, at the suggestion of Sir George (then Dr.) Johnson, to operate on a lady with a similar history. I performed nephrotomy upon the kidney opposite to the one which had previously been the seat of trouble; but it was too late. The anuria had persisted several days. The patient was aged and very obese, and she died about fifteen hours after the operation, but not before some ounces of urine had escaped into the dressings. In a third case a more satisfactory result followed. On Jan. 5th, 1889, I removed the left kidney for extreme hydronephrosis. In December last the right kidney, which was movable, showed marked signs of intermittent hydronephrosis with impaired secretion. Ably seconded by Dr. Knight, the lady's medical attendant, I was permitted to perform nephrotomy and stitch the cut edges of the kidney to the lumbar wound. The patient is now living and doing well, passing some of her urine through the urethra and some through the loin. There is no longer any fear of the further destruction of the kidney or of anuria from obstructed ureter. Surgical literature supplies us with evidence in favour of nephrotomy in such cases. Bardenheuer, Clement Lucas, F. Lange and Willy Meyer have each recorded a successful case. In each the operation on the second kidney was clearly indicated not only on account of anuria but by the pain and other symptoms which pointed to obstruction in the ureter of that kidney. The operation in all four cases would have been indicated if no previous operation had been performed on the opposite kidney, but it became absolutely necessary in order to save life in two of them by the fact that it was the patient's only kidney which was implicated.

In a small proportion of cases after nephrotomy or nephrectomy suppression of urine follows—indeed, is caused by the operation—even though no mechanical obstruction whatever is present on the other side. These are typical instances of reflex anuria due to the disturbance of the nerve plexus of the organ operated upon. I have had one case of this kind which occurred in a woman thirty-five years of age upon whom I performed nephrotomy for calculous pyonephrosis. I have not as yet attempted operative treatment for such a case nor do I know of its having been used; but it has been proposed by Meyer under certain specified conditions to treat cases of anuria coming on after nephrectomy by "an artificial direct depletion" of the remaining kidney with the view of reducing the hyperæmia which follows the ligature of the renal bloodvessels of the kidney removed. I do not think we must be sanguine of the results of such depletion, though the proposal seems to be worthy of trial.

For the extraction of stone from the kidney opinions still differ as to the comparative advantages of incising the renal substance or the renal pelvis. I am still, as I have been from the first, inclined strongly to the belief that the route through the renal substance is the best. Though attended by much more bleeding, it permits of a much more thorough search after calculi; it allows of every portion of the interior of the organ being felt by the finger, and it is followed for a much shorter time by the escape of urine through the wound, and much less frequently by renal fistula. I have not as yet found that suturing the incised pelvis curtails the time during which urine escapes through the wound, but I believe it to be the right practice and calculated to hasten convalescence. M. Tuffier, one of the most recent writers on the surgery of the kidney, distinctly inclines to the same views as my own, and goes further, for he is of opinion that the extraction of a stone through an incision in the renal pelvis is a more dangerous operation and that the wound heals less readily. He puts the mortality of nephrolithotomy at 6 per cent. and the frequency of fistula at 3·33 per cent.; whereas the mortality of pyelotomy he finds is 16·66 per cent. and the frequency of fistula 20 per cent.

As to the best method of searching for the stone in nephrolithotomy, I would lay emphasis on the necessity of exploring the whole of the interior of the kidney with the finger introduced through an incision in the curved border of the organ. To do this satisfactorily the kidney ought to be brought out of the wound on to the surface of the loin. By this means the structure of the kidney can be examined by the eye whilst its interior recesses are being thoroughly probed by the finger. No other method is really satisfactory, and until this has been done effectively the surgeon is not in a position to say that there is no stone present. Probing with the needle I have quite given up as ineffectual and fallacious.

Some of the latest developments in operating upon the higher urinary organs relate to stenosis, valvular stricture, and valve formations in the ureter. Plastic operations after resection of portion of the ureter, longitudinal division of stricture and transverse union of the longitudinal wounds, and excision of the ureter (ureterectomy) in its whole length after nephrectomy for tuberculous disease have each been performed with success by Küster, Christian Fenger and Reynier.[4] It is highly probable that one or other of the plastic operations may advantageously replace nephrectomy or nephrotomy in certain cases of moderate degrees of non-calculous hydronephrosis, more especially when there is any doubt about the healthy condition of the other kidney.

Vesical affections.—The operative treatment of vesical affections has undergone many mutations. Within the first quarter of the century there was no choice as to the mode of removing a vesical calculus, except as to where the incision should be made, whether above the pubes, in the perineum, or through the rectum. There was no alternative but to suffer or be cut. A little later, however, and lithotrity was so much improved and so simplified that it was deemed applicable to a great variety of cases, and Liston, in 1838, made a forecast of the present practice when he wrote that lithotrity "is likely in a few years to supersede in a great measure the operation of cutting for stone." Three things combined to bring lithotrity to its present perfection—anæsthesia, Otis' urethrometer and Clover's exhausting syringe. These three factors in Bigelow's hands resulted in litholapaxy, and this has necessitated a complete revision of the rules which formerly guided the surgeon in his choice between the crushing and the cutting operations. Neither cystitis, nor irritable bladder, nor renal disease, nor enlarged prostate, nor stricture of the urethra, nor even the small calibre of the boy's urethra are now reasons against litholapaxy. In the adult the new operation is employed with great success, under circumstances in which the older operation of lithrotrity, with all its improvements—and they were many—would have been fatal. In children its success is simply marvellous. The latest statistics from India, based upon the practice of Brigade-Surgeon Keegan, Surgeon-Major Freyer and others (Caldecott, Dennys, Goldsmith, Gimlette, Cunningham and Headley), give a death-rate of 2·71 per cent. in a total of 663 cases. Surgeon-Major Freyer, though he has done 191 lateral lithotomies in boys without a death, has of late abandoned Cheselden's time-honoured operation, by which he can show such brilliant results, in favour of litholapaxy. Though Mr. Southam, Mr. Walsham and Mr. Morgan in this country have reported several successful cases, it yet remains to be seen, as Mr. Jacobson has well pointed out, whether litholapaxy in boys, when employed on Europeans and by surgeons whose opportunities of operating are less than those of Indian surgeons, will prove equally successful with lateral lithotomy, which has long been one of the most successful of the major operations of surgery. It may reasonably be questioned whether the risk of injury to the small and tender bladders of the young, the after-effects of some overlooked broken fragment of calculus, and the occasional occurrence of phosphatic cystitis, such as is seen now and again to follow the operation in the adult even when the whole of a uric acid calculus has been successfully removed, will not be more than a set-off against the recognised risks of lateral lithotomy.

Another advance rendered possible by complete anæsthesia and which could never have been accomplished without it is digital exploration of the male bladder. Since 1882 this method, chiefly through the writings and advocacy of Sir Henry Thompson, has become a well-established aid to diagnosis. Indeed, in all doubtful and obstinate cases of bladder affections and where the electric cystoscope is useless or inadmissible the boutonnière, or external urethrotomy, is as

[4] Mercredi Médical, Feb. 22nd, 1893.

important a means of diagnosis and treatment as is laparotomy in cases of abdominal affections. An almost immediate result of digital exploration of the bladder was to direct the surgical mind to the removal of tumours of the bladder, a class of cases which had previously been regarded as beyond the range of the surgeon's art to relieve. The name of Sir Henry Thompson will always be associated with the original growth of this subject and to him is due the honour of proposing perineal urethrotomy as the best method for the removal of vesical tumours and of ably, and as I think successfully, defending his proposal against the direct challenge it received from the distinguished surgeons of the great Paris school, who advocate now, as they did ten years ago, the invariable employment of the suprapubic operation. Supra-pubic or hypogastric cystotomy has been the subject of frequent changes of opinion and favour. First practised by Franco in 1561, who himself strongly condemned it, the operation underwent many fluctuations. Liston wrote of it: "The operation above the pubes, still practised occasionally, is not to be resorted to for choice." Some twelve years ago the surgical world was surprised at hearing that two boys had been cut for stone above the pubes on the ground that antiseptics had made all peritoneal operations safe. If I remember rightly, these patients died, but in a few years the extra-peritoneal operation had gained ground and it was confidently predicted that in the near future all boys suffering from vesical calculus would be cut above the pubes instead of by the perineum. At the present day, owing to (1) the researches of Garson in 1878 and of Petersen in 1880 on the influence of rectal tamponade in raising the anterior vesical reflection of the peritoneum, and (2) to the eagerness with which every opportunity is seized of widening the field of abdominal surgery, the high operation for stone, for bladder tumours, and for prostatectomy, is "resorted to for choice"—it is the operation preferred by the majority of surgeons in the majority of intra-vesical cases. Just now there are signs of a return to the old plan of operating by doing away with the precautions of inflating the rectum and distending the bladder, and surgeons who feel at home chiefly or only in "peritoneal proximity" are extracting vesical calculi by the supra-pubic method without employing the modern improvements. I have the conviction that the median perineal operation in adults and Cheselden's operation in boys are greatly to be preferred not only on account of their efficiency and convenience but chiefly because of their smaller mortality. Admitting the advantage of the hypogastric route in certain exceptional cases of encysted or very large calculi, it is inferior to the perineal route as a means of draining the bladder in cases of cystitis, also in all cases where in operating for tumour of the bladder the growth proves to be malignant and non-removable, and in most cases of non-malignant and removable tumours, of encysted calculi, of foreign bodies such as hair-pins, of stones of one inch and a quarter in diameter or even more, and in exploration of the bladder for doubtful sources of hæmorrhage. In some cases of hæmorrhage, as when caused by prostatic calculi and prostatic polypi; and for cases of calculi in an enlarged or pouched prostatic urethra, not only is the perineal operation the best but the hypogastric cystotomy is useless. Nor is the high operation requisite for vesical calculus in men with ankylosed hip-joint, as has somewhere been stated. I have found the median perineal method perfectly effective under these conditions.

The hypogastric operation is undoubtedly easier; it makes less demand on the nerve, steadiness and judgment of the surgeon, it is throughout under the guidance of the operator's eye, and less important structures are divided; but its general, indeed, far too general, employment is much less due to these reasons than to the unreasoned fact that it is just now "the fashion."

Prior to 1886 it was disputed whether a single unequivocal recovery after intra-peritoneal rupture of the bladder had ever occurred. Syme had stated: "If the rupture takes place above or within the reflection of the peritoneum there cannot be the slightest chance of escape"; and Sir Henry Thompson wrote in 1883: "In any case a recovery has never been known to happen and can scarcely be regarded as possible." In 1886, however, I was able to publish[5] the first—and, so far as I know, the only—case on record which supplies actual proof of recovery after an intra-peritoneal rupture of the urinary bladder. It was that of a man whose bladder was twice ruptured—the first time by violence, the second time (seven years afterwards) by the giving way of the adhesions whereby the original rent had been closed. This bladder was examined by a committee which met at the Royal College of Surgeons and consisted of Dr. Goodhart, Dr. Kingston Fowler, Sir William Savory and Mr. Thomas Bryant. One of the conclusions they arrived at after a critical consideration of the whole case was "that there is every probability of the original injury having been a rupture of the bladder attended with extravasation of urine into the peritoneal cavity." The case has this value that it disposes of the doctrine till recently, if not still, largely held that the fatal mischief in intra-peritoneal rupture of the bladder is done in the first onset by the escape of urine, the pernicious effects of which were deemed to be out of the power of the surgeon to prevent. It shows, as some of the accidents in abdominal operations have shown, that normal urine can be absorbed by the peritoneum and that by keeping the bladder empty by efficient drainage the rent may cicatrise and the patient recover. A month later than the publication of the above case a great surgical triumph, and one which adds to the honour of British surgery, was recorded in THE LANCET of Dec. 11th, 1886, by Sir William MacCormac, who, following in the enterprising though unsuccessful steps of Mr. Willet and Mr. C. Heath, obtained two recoveries after laparotomy and suturing of the bladder, thus at the same time showing how extravasated urine can be removed from the peritoneum, the peritoneum antiseptically treated and the rent in the bladder securely and permanently closed.

Rupture of the urethra.—The established method of treating traumatic rupture of the urethra was simply to make a free incision in the middle line of the perineum and leave the urine to drain away through the laceration until repair closed both urethral and superficial wounds. In 1874 it occurred to me that when immediate operative treatment is resorted to in these cases—that is, before damage is done to the parts by excessive extravasation and by inflammation—the torn edges of the urethra might be drawn together over a catheter introduced into the bladder and united by two or three sutures. This I did, in the case of a man admitted into the Middlesex Hospital, with the most satisfactory result, and I repeated it in a boy aged thirteen who fell across a crate of glass and came under treatment on Aug. 5th, 1874. Fine silver wire sutures were used in this case, but with a less satisfactory result, as one of the stitches gave way owing to the slipping out and reintroduction of the catheter on the night of the operation. A tough cicatrix formed, causing a projection on that side of the urethra and a corresponding deviation of the catheter for months afterwards. One advantage of the suturing was shown by the facility with which the catheter was replaced after its first removal. I have since then in several instances sutured longitudinal wounds of the urethra and sometimes closed the superficial structures of the perineum as well. My colleague, Mr. A. Clark, in a case in which he performed external urethrotomy for the extraction of a hairpin impacted in the male urethra, adopted this plan, and with the most gratifying result. The wound healed entirely by first intention and the patient was quite well in a few days. Mr. Marmaduke Sheild has ably advocated this treatment.[6] In neither of my cases of circular urethrorrhaphy did I think it requisite to make a drain for the urine behind the point of suturing, either by supra-pubic cystotomy or median urethrotomy. My colleague, Mr. Pearce Gould, has recently published two cases in which he employed circular urethrorrhaphy, and other surgeons—Mr. Wright of Manchester, Dr. Vincent of Lyons, and Dr. Wm. Wile of Danbury, Conn.—have quite independently also done the same. Dr. T. H. Manley of New York has in two cases cut out old-standing strictures of the urethra and brought together the divided urethral ends with catgut sutures. Thus ureter and urethra have been now treated in this respect in the same way.

Stricture of the urethra.—The treatment of stricture of the urethra has always been a subject of much diversity of opinion and practice. Surgeons fifty years ago did not dream that immediate or even gradual dilatation up to full size could follow upon the use of such thread-like bougies as are now used for cases which formerly were regarded as impermeable strictures. The attachment of a terminal pilot bougie to the internal urethrotome as well as to Perrève's or Holt's dilator has made it possible to employ these instruments for immediate division or dilatation in strictures of very small calibre. These instruments have not been universally approved. If my recollection serves me aright, during the whole time I was

[5] Royal Medical and Chirurgical Transactions, vol. lxx., p. 195.

[6] THE LANCET, Oct. 20th, 1888.

student, dresser and house-surgeon at Guy's Hospital I never once saw either of them employed, though Mr. Durham has since invented his four-bladed urethrotome. Gradual dilatation for permeable strictures, external urethrotomy for strictures associated with urethral abscess or extravasation or multiple fistulæ, and perineal section for impermeable strictures were the modes of treatment I then saw there. Perineal section (or Cock's operation as it is called by Guy's men) and puncture of the bladder per rectum were the treatment for retention of urine from impassable stricture. In many cases of perineal section the patient was left for the rest of his days to pass urine through the perineal fistula. Since my connexion with the staff of a hospital I have only once punctured the bladder per rectum, and though suprapubic aspiration has been introduced for retention in certain cases I have not, except in a few instances, practised it or sanctioned its adoption. I have seen one case of death from it caused by recurring hæmorrhages from a transfixed vesical vessel, and Mr. W. H. Bennett has pointed out some of the dangers of aspiration. Nor have I in any of the cases in which I have performed perineal section—and they are very numerous—ever once allowed the patient to continue to micturate through the perineal opening, but have always, either at the time or at a subsequent operation, divided the stricture from behind and re-established the route through the length of the urethra. I have, too, in this way re-established the natural channel after the patient had for many years voided all his urine through a perineal opening. All cases of stricture which can be treated by simple dilatation ought to be so treated, but there are a fair minority which require different management. External urethrotomy or perineal section is the proper operation for cases of retention of urine with impassable stricture, for strictures complicated with urinary fistula, abscess or extravasation. For strictures which will not yield to ordinary dilatation, which are very irritable or are of very resilient character, internal urethrotomy, or forcible dilatation under chloroform, are the operations for choice. Wheelhouse's operation, simple and attractive in principle as it is, I have rarely seen successfully, and never *readily* successfully, performed.

It never has seemed to me that the external and internal operations ought to be regarded as alternative methods. When simple dilatation is useless, and the external operations are unnecessary we have the choice of internal urethrotomy, forcible dilatation and electrolysis. I have no experience of the latter, having been prejudiced against it by the want of simplicity of the proceedings, by the length of time required for the treatment, and by what I have heard from Sir Henry Thompson of the trial made in his and Mr. Erichsen's presence some twenty years ago by the French surgeon Millet. The late Dr. Steavenson was one of its warm advocates up to the time of his death, and his judgment was based on personal and careful trial of it. The President of this Society and Mr. Bruce Clarke have, we know, practised it with considerable success, but I notice that both of them now incline towards its abandonment, or at any rate to its restriction to a very few cases in private practice on persons who are in no way pressed for time. As between internal urethrotomy and forcible dilatation I think the tendency of opinion is to take too unfavourable a view of the dilator. Good as is internal urethrotomy for cases of simple stricture near the bulb or meatus, and especially when the stricture is annular or situated on the floor of the urethra, so that it, and not the healthy mucous membrane, is divided by the blade, yet I think that the dilator is preferable for multiple strictures in the spongy part of the urethra and where the stricture tissue is limited and so situated that it escapes incision by the urethrotome. Though relapses sometimes follow the use of the dilator, as they do also internal urethrotomy, yet in the majority of the cases in which I have used it it has given very satisfactory results indeed. I have always used it as a dilator, not for forcible rupture of the stricture. I have known no evil consequences follow its employment, but I have, on the contrary, known it to leave a permanent cure, even when no instrumentation whatever had been employed for a period of eleven years. It is much in favour of forcible dilatation that such experienced surgeons as Barnard Holt, Christopher Heath, and the late Campbell de Morgan and Maunder thought so highly of it, and now that the instrument has been improved by Mr. Reginald Harrison and its use extended by the addition to it of the pilot bougie and the conversion of the guide rod into a small catheter it can be employed for very small strictures and sometimes without the need of anæsthesia.

In conclusion, Mr. President and gentlemen, let me ask you to excuse the fragmentary character of this address, of the many imperfections of which I am only too painfully aware. Let me, too, assure you how deeply I appreciate the honour of having been invited to deliver the Cavendish lecture.

A RARE CASE OF HEREDITARY SYPHILIS, WITH REMARKS ON INTERSTITIAL KERATITIS.

BY GEORGE OGILVIE, B.Sc., M.B.EDIN., M.R.C.P.LOND.,
PHYSICIAN TO THE HOSPITAL FOR EPILEPSY AND PARALYSIS, REGENT'S PARK.

(Concluded from p. 1374.)

IN the following remarks I wish to draw attention to a few points of interest attached to this case which have already been briefly indicated. (1) Small-pox was transmitted from the mother to a child in utero, although there has been no evidence of the transmission of syphilis from any of the children to the mother. I did not see the child myself, but there is no reason to doubt the accuracy of the parents' statement that No. 9 was born with a skin eruption which was pronounced by the medical attendant to be small-pox and which in appearance was entirely different from the skin eruption of the first child. Many cases of this kind have been recorded, but the facts known up to now do not bear out Hutchinson's statement that "if a pregnant woman suffers from small-pox her fœtus will also be affected." I refer the reader to Schroeder's "Text-book of Midwifery," fifth edition, page 361, in which he says: "In small-pox the fœtus is born as a rule without any eruption, but it may occasionally appear at birth and after birth." Without entering into any discussion, I only state the fact that the virus of small-pox went from the mother to the child, whilst apparently the virus of syphilis did not pass from the child to the mother. I am aware that this immunity of the mother is generally explained by the supposition that the syphilis remained latent. Considering, however, that recent investigations seem to show that the microbes of some infectious diseases pass from mother to child, whilst others do not, and that even in the case of transmissible organisms certain conditions must be fulfilled in order that the transmission may take place,[1] speculation on the above-mentioned fact is idle until the nature of the syphilitic virus is understood. (2) In one of the children partial atrophy of the optic disc preceded by ten years the onset of interstitial keratitis. It will be noted that at the first ophthalmoscopic examination in 1889 no changes in the periphery of the fundus were found, whilst at present there exists well-marked choroido-retinitis with pigmentation of the retina. This condition was first observed by Dr. Kirch of Aachen, whom I have to thank for his notes on the case, as well as for the fields of vision which he took both before and after the mercurial treatment carried out there. It certainly is possible that the peripheral changes may have been overlooked at the first examination, as the condition of the optic disc, after a clear history of meningitis in infancy, seemed to be a sufficient explanation of the defect in vision. This is not probable, however, as the case was seen at the time by several careful observers independently. Probably partial atrophy of the optic disc, due to cerebral disturbance, was followed by choroidal changes leading to pigmentation of the retina. A case almost identical with this one, so far as the changes in the fundus are concerned, is recorded by Hutchinson.[2] "There could be no doubt that the patient had experienced an attack of neuro-retinitis due to meningitis in infancy, whilst at the time of observation—adult life—changes were in progress in the direction of retinitis pigmentosa." In my case, after the inunction treatment

[1] The bacillus of typhoid fever has been found six times in the fœtus when the mother was affected with the disease, whilst in five other cases it could not be detected. Vide Ernst in Ziegler's Beiträge, vol. viii., p. 188.

[2] Syphilis, 1887, p. 219 and 220.

the central vision was found to be a little better and the field somewhat larger than before, but I entirely agree with Dr. Kirch that it remains doubtful whether there has been any real improvement by treatment, as differences between a first and second examination are far from rare in children, the better result being due to the child becoming accustomed to the method of examination. Hirschberg[3] gives the history of a case of atrophy of the left optic nerve after neuritis due to specific meningitis during the first year, followed thirteen years later by specific retinitis in both eyes, and after the disappearance of the retinitis by double interstitial keratitis leaving changes in the periphery of the choroid. It may be mentioned that in this case, as in my own, the paralysis of the left arm was noticed by the parents seven months after birth, but it disappeared without any treatment. Cases of this kind are rare, but they seem to justify the prognosis which Hutchinson gave in the above quoted case: "As yet no attack of keratitis has been experienced, but probably it is to come." (3) In the same child there was interstitial keratitis during prolonged mercurial treatment. It is a fact of frequent occurrence that the interstitial keratitis of one eye develops during the mercurial treatment adopted for the same disease in the other eye.[4] From Hutchinson's statement that interstitial keratitis caused by inherited syphilis is "in the end always symmetrical,"[5] whilst it is generally not symmetrical[6] in the acquired form of the disease, the conclusion may be drawn that even the mercurial treatment which he advocates has never succeeded in preventing the outbreak of the inflammation in the second eye. I am not aware of another published case in which the interstitial inflammation of the first eye has appeared during prolonged mercurial treatment adopted for other symptoms of hereditary syphilis in the patient, although probably the same observation has been made by others. This is easily explained by the circumstance that the other usual symptoms of late hereditary syphilis appear in the bones, such as nodes in the tibia and radius and symmetrical synovitis, especially of knee-joint, for which affections, as in the tertiary symptoms of the acquired disease, iodide of potassium is the most generally used and the most efficacious remedy. Hutchinson remarks that, although mercurial treatment previously adopted does not prevent the occurrence of iritis in infants, it is most efficacious in curing the disease when it has developed. In my case, as well as in the cases previously referred to, it is not a question of previous treatment, but of treatment carried out actually at the time of the onset of the corneal disease, and both classes of cases seem to prove that mercurial treatment is unable to check the development of interstitial keratitis. On the other hand, many cases are known in which mercurial treatment seemed to have had an injurious effect on the corneal disease. This was recorded by Hutchinson in 1858 and has since been observed by many others. These two facts taken together, with the "invariable tendency of hereditary syphilis to recovery,"[7] along with another not less prominent feature, the tendency to run a very chronic and protracted course, make it appear very doubtful whether any good has ever been done by the administration of mercury in cases of interstitial keratitis. Indeed, it is very probable that in some cases mercury not only aggravates the disease, but is actually the cause of the outbreak. Small doses of mercury will certainly do less harm than large ones, but their curative effects on interstitial keratitis have not been proved by facts. I may mention here the case of a girl aged fifteen suffering from interstitial keratitis and synovitis of the knee-joint of undoubtedly specific origin, and with a peculiar idiosyncrasy which made the administration of iodide of potassium impossible, who recovered completely on a tonic treatment—consisting of iron and arsenic, cod-liver oil, milk and bracing country air—assisted by the local application of warm fomentations. Cases of this kind do not prove, as some suggest, that the cured disease was not syphilitic, but they show how much caution has to be used in attributing the success of a treatment in these cases to the effect of a special drug.

Although I have no further remarks to make as regards the case itself, I wish, before concluding this paper, to give a short sketch of the present state of knowledge of the etiology of interstitial keratitis. Hutchinson and Panas may be quoted as the most distinguished supporters of the two extreme opinions held upon this question.

HUTCHINSON, 1887.[8]	PANAS, 1881.[9]
1. Interstitial keratitis in its typical form is always a consequence of syphilis, and it is in itself sufficient for the diagnosis (p. 75).	1. Hereditary syphilis is only one of the numerous causes of exhaustion of constitution wh'ch lead to rickets and later on to diffuse interstitial keratitis (p. 578). Interstitial keratitis is a manifestation "de la misère organique," whatever its cause may be. Inherited syphilis may be one of its causes, but it is neither the only one nor even the most common (p. 580).
2. The transmission of the disease as well in inheritance as in acquisition is always effected by the conveyance from person to person not of a tendency to disease but of a particulate virus (p. 71). It is not the state of health which syphilis may have produced in the parent which he transmits to his offspring, but the poison itself (p. 385).]	2. We flatly deny that the venereal virus acts directly on the tissue of the cornea, producing thus a keratitis really deserving the denomination of "kératite hérédo syphilitique" (p. 579). Rachitis is most frequently associated with this affection of the cornea, and this shows that both are dependent upon a general state of imperfect nutrition (p. 580).

That M. Panas still holds the same views on this question is shown by the last thesis published on this subject under his supervision by Loukaetis,[10] who merely contents himself with repeating the arguments of M. Panas without adducing any fresh evidence in favour of his assertions. His paper does not call for special notice, but I shall comment briefly on M. Panas's reasons for believing in the non-specific nature of interstitial keratitis as laid down by him in his original paper, 1881. They are the following: (1) If interstitial keratitis were really dependent upon hereditary syphilis it would appear as often, if not oftener, soon after birth as later on; (2) if hereditary syphilis really shows so much affinity to the tissue of the cornea, one would also see acquired syphilis attack this membrane; (3) the dental alterations have not the significance given to them: (*a*) because in cases of undoubted interstitial keratitis the abnormality of the teeth may not exist, (*b*) a similar malformation of the teeth undistinguishable from the syphilitic is found in rickets; (4) the supposed nodes of the tibia are generally only rickety deformities; if they are veritable prominences of painful periostitis they are as much due to scrofula as to syphilis; (5) the argument taken from the mortality of children would only be of value if syphilis were the only cause of this occurrence. It seems to me that none of the above reasons proves the non-syphilitic origin of the disease, as will be seen from the following remarks: Interstitial keratitis is not seen in infancy for the simple reason that it is a *late* symptom of inherited syphilis. The inherited syphilis of infancy is closely related to the secondary stage of the acquired form of syphilis, and the symptoms of inherited syphilis observed later on to the tertiary stage of that disease; therefore the non-appearance of interstitial keratitis at birth does not disprove its syphilitic origin any more than the non-appearance of bone and brain disease immediately after the primary sore disproves the specific character of these symptoms. The existence of interstitial keratitis in acquired syphilis is proved beyond doubt by many of the best and most competent observers—e.g., Alexander, Fournier, Fuchs, Haltenhoff, Haab, Hirschberg, Horner, Hutchinson, Michel and others. That the condition of the teeth does not always coexist with interstitial keratitis only shows that in congenital syphilis as well as in the acquired form all symptoms need not necessarily be present in the same individual. The difference between the teeth in congenital syphilis and those in rickets is too well known to require further comment.

The argument taken from the mortality of infants belonging to the same family would be of value as corroborating the evidence of other symptoms if syphilis were proved to be the most frequent or even only a frequent cause of this occurrence, and this, I think, has been proved to the satisfaction of almost every clinical observer. Hutchinson himself thinks that it is quite possible that the influence of syphilis has been exaggerated in this direction,[11] but he admits that the proneness to abort in syphilitic mothers is "undoubtedly very common." The vast majority of those who have written on this subject

[3] Centralblatt für Augenheilkunde, 1886, p. 102.
[4] Vide Foerster, Wecker and others.
[5] Syphilis, 1887, p. 76. [6] Ibid., p 238.
[7] Hutchinson: Syphilis, 1887, pp. 76, 89, 232.
[8] Syphilis. London, 1887.
[9] Archives de l'Ophthalmologie, vol. i., 1881, pp. 577 to 586.
[10] De la Kératite Parenchymateuse et en particulier de sa Pathogenie et de son Traitement. Paris: 26 Juillet, 1892.
[11] Hutchinson: Syphilis, 1887, pp. 78, 79, 415.

recognise the important part which inherited syphilis plays in the production of interstitial keratitis, as first pointed out by Hutchinson,[12] although few, if any, will agree with him that interstitial keratitis in its typical form is "always" a consequence of syphilis and "in itself" sufficient for the diagnosis. This is evident from a table of the statistics published on this question which has been put together by Gross,[13] and which I here reproduce, adding Pfister's[14] statistics published in 1890.

Name.	Number of cases.	Percentage of inherited syphilis.
Alexander	102	35·3
Ancke	100	61·0
Ayres	12	8·3
Cohn	—	6·5
Davidson	—	20·0
Despagnet	119	14·2
Dietln	18	55·2
Giraud-Teulon	30	46·6
Graefe	—	5·0
Haltenhoff	66	42·7
Horner	51	70·5
Iakowlena	63	57·1
Leplat	28	64·2
Michel	—	55·0
Nettleship	—	68·0
Parinaud	32	96·7
Pfister	130	64·6
Saemisch	—	63·0
Sedan	34	32·3
Theobald	8	50·0
Trousseau	40	92·5
Wecker	—	66·0

Although "there are not many sceptics as to the association between interstitial keratitis and hereditary syphilis,"[15] few, if any, will bear out the before-mentioned statement of Hutchinson to its full extent. It must be admitted that statistics drawn up by different observers are often based upon different principles and therefore some care has to be taken when the results are compared. For instance, in Pfister's series of 130 cases the existence of Hutchinson's teeth in the patient had been accepted in itself as sufficient evidence to warrant the diagnosis of inherited syphilis, and still in 35 4 per cent. nothing could be found pointing to that disease. The highest percentage was found by Parinaud, but he admits "que la lésion cornéenne n'a rien de spécifique et peut s'observer en dehors de la syphilis."[16] It must be remembered, however, that both he and Trousseau derived their results from a comparatively small number of cases. A further argument against the exclusively specific nature of interstitial keratitis may be taken from the fact that it has been observed in dogs—*vide* Haltenhoff and Randolph—and has been experimentally produced in rabbits by section of the ciliary vessels.[17] It therefore appears to me that in the causation of interstitial keratitis syphilis plays the most important but *not* the only part. Perhaps 60 per cent. are specific. The corneal affection is an important symptom of syphilis, but only to the same extent as are all the other symptoms of this polymorphous disease of which "not one is pathognomonic," and the diagnosis of which "is to be attained rather by careful appreciation of all the facts of the case than by placing confidence in any one symptom."[18] As to the second point referred to by M. Panas, the mode of transmission of the disease, it is futile to argue so long as we are in perfect darkness regarding the nature of the syphilitic virus.

Certainly many features of the acquired disease, as well as the similarity between most acquired and congenital symptoms, point to its being caused by a specific micro-organism. On the other hand the frequent death of children in utero whilst symptoms at the time of birth are rare, the death of apparently healthy children after birth whilst the necropsy reveals no visible disease,[19] and the malformation of the skull attributed to periostitis in utero whilst bone symptoms as a rule only develop in later stages, seem to point to the transmission of some weakening condition or diathesis. From a merely clinical point of view this double-faced aspect of hereditary syphilis is well characterised in Fournier's saying: "La syphilis paternelle tue l'enfant plus souvent qu'elle ne se borne à lui transmettre la syphilis." Even if the microbe of syphilis should be found, further investigations will have to show in what percentage of cases it has to be considered as the cause of interstitial keratitis.

Welbeck-street, Cavendish-square, W.

[12] Ibid.

[13] Dr. Emil Gross: A Keratitis interstitialis rol Szemészet, 1889, No. 5, p. 50.

[14] Jul. Pfister: One Hundred and Thirty Cases of Interstitial Keratitis Diffusa. Klinische Monatsblätter für Augenheilkunde, vol. xxviii., 1890, pp. 114 to 123.

[15] Hutchinson: Syphilis, 1887, p. 306.

[16] Archives Générales de Médecine, Nov., 1883.

[17] Warzenmann in Graefe's Archiv, vol. xxxvi., Part 2, pp. 23, 29, 51, 52, 57 to 59.

[18] Hutchinson: Syphilis, 1887, pp. vii., viii.

[19] As in my case No. 6 and in Hutchinson: Syphilis, p. 393.

EXPULSION OF SILK TWIST FROM THE BLADDER TWO YEARS AND SEVEN MONTHS AFTER SUPRA-PUBIC CYSTOTOMY.

BY CAMPBELL WILLIAMS, F.R.C.S. ENG.

I VENTURE to record the following case as being one of interest on the behaviour of the bladder towards silk sutures in its wall.

A man aged sixty-four underwent the operation of suprapubic cystotomy on June 3rd, 1889, when a uric-acid calculus, together with the projecting part of the middle lobe of his prostate, were removed. With the exception of a vein on the anterior surface of the bladder, which was divided between two ligatures, no other vessel was tied. After the bladder had been steadied by two fixation threads (silk) it was opened by a vertical incision. It was not stitched up at the end of the operation. About two-thirds of the abdominal incision were drawn together by sutures. The external wound was healed by June 17th—i.e., fourteen days after the operation. The patient was out walking on June 25th. On Oct. 9th in the same year, owing to a return of vesical symptoms, he was again sounded and a stone was struck. Median cystotomy was performed on Oct. 22nd and three small calculi were extracted. The wound was healed by Nov. 20th—i.e., twenty-nine days after the operation. These calculi descended into the right ureter early in September. Owing to vesical irritability, which came on according to the patient in May, 1891, he was sounded in the following June, but no stone was detected. His slight frequency of micturition continued until Jan. 15th, 1892, when the patient voided by his urethra a piece of silk twist two inches and an eighth long and knotted at one end. It was lightly coated with phosphates. From its appearance length, and thickness I imagined it was one of the fixation threads that was overlooked and left attached to the bladder at the operation that was performed on June 3rd, 1889. The probability is that separation took place subsequently to the median lithotomy in October or else it would have been evacuated at that time. The patient had, notwithstanding the prostatectomy, about two to four drachms of residual urine, and for this reason he used to wash out his bladder daily, which may account for the comparatively small inconvenience that the presence of the silk caused. If the bladder had been sewn up the case would have been similar to that of a patient in University College Hospital, under the care of the late Mr. Berkeley Hill, who underwent the supra-pubic operation for tumour of the bladder. The cut viscus was sewn up with fine silk. About four months after the operation the patient expelled two silk stitches by his urethra. The symptoms which were present then disappeared. (The tumour, which was malignant, eventually recurred.) In this case the stitches were presumed to have only pierced the muscular coat of the bladder; but in my case the mucous membrane and the muscular wall were included in the loop.

Remarks.—The question of the expediency of suture of the bladder in the adult is more or less a vexed one. Mr. Treves[1] describes it as "an ideal method of concluding the operation," but states that the early records show that in only one-third of the cases did primary healing take place. I have had little experience of a sutured bladder, the case in University College Hospital being the only one in which I knew Mr. Berkeley Hill to have employed it. His usual practice was to incise vertically and not to sew up, the cases healing, on the average, in about twenty days. Should suture be resorted to, silk is evidently unsuited for the purpose.

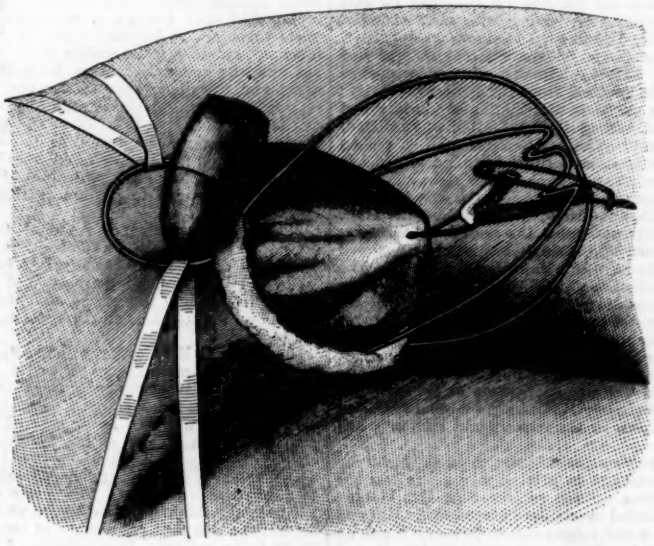
Welbeck-street, W.

[1] Manual of Operative Surgery, vol. ii., p. 588.

A MODIFIED OPERATION FOR THE RELIEF OF UNDESCENDED TESTIS.[1]

BY LEONARD A. BIDWELL, F.R.C.S. ENG.,
ASSISTANT SURGEON TO THE WEST LONDON HOSPITAL ETC.

THE treatment of undescended or partially descended testis does not appear to be very definitely laid down in any work on surgery. It is generally supposed that an undeveloped testicle in the inguinal canal is more prone to malignant disease than the normal organ, therefore when an operation has to be undertaken castration has been recommended. The reason for this severe measure is afforded by the bad results of any conservative method in the pre-antiseptic days; after such operations very troublesome and sometimes fatal suppuration occurred in the scrotum. When the testis can be forced out of the inguinal canal the patient may be provided with a truss with a horseshoe-shaped pad; after this treatment, which was recommended by Professor John Wood, the organ rarely descends further than the root of the penis and often retires after the truss is taken off. The method which I employ is as follows: The incision is the same as that for the radical cure of hernia and is not carried into the scrotum. When possible the testis is squeezed out of the inguinal canal, but when this cannot be done the fibres of the external oblique have to be divided. The tunica vaginalis is then opened and divided just above the testis; if a hernia be present its upper end is dissected up and after being ligatured at the internal ring is cut off; when no hernia is present it is simply cut away. The fibres of the cremaster are cut across and the testicle is pulled away from the cord, whilst the structures between the vas and the epididymis are carefully divided with the point of a knife. In this way the testicle becomes inverted, the vas entering at the top instead of at the bottom of the epididymis, and the vestigial remains (namely, the hydatids of Morgagni or the end of the Mullerian duct) at the top of the normal testis are now at its bottom. The result of the inversion is that the testicle hangs about one inch and a half lower and can be placed at the beginning of the scrotum. During the separation of the vas from the epididymis the spermatic artery, veins and nerves are divided and require ligature, but the artery of the vas, of course, is carefully saved. A finger is then pushed from the wound into the bottom of the scrotum and a mounted needle armed with a silk thread is passed through the skin on to the finger; the thread is thereupon withdrawn from the eye of the needle and the latter passed through the vestigial remains at the bottom of the inverted testis; the needle is then threaded again and withdrawn through the original puncture at the bottom of the scrotum. The inguinal canal having been closed by Macewen's method, the cut fibres of the external oblique are sutured and the skin wound united by a continuous suture. The two ends of the silk thread which has been passed through the end of the testis are then knotted together outside the scrotum and are attached by means of a piece of elastic drainage tube and a safety-pin to the crossbar of the wire cage. The accompanying engraving, from a drawing by Mr. Leonard Mark, shows the apparatus *in situ* and attached to it the traction thread issuing from the bottom of the scrotum. The dotted line represents the position of the incision. The cage has previously been sterilised by boiling and strips of cyanide gauze are wound round the part which rests on the skin. It is fastened to the body by tapes passing round the waist and thighs, which fix it very firmly, the apparatus being not at all uncomfortable. The wound is dressed with cyanide gauze and the whole cage enveloped in an antiseptic dressing. The drainage-tube is tightened up next day and again, if necessary, on the following day; the testicle will then probably be at the bottom of the scrotum. The cage should be kept on for at least a week or ten days; when it is removed the thread is withdrawn from the scrotum.



The following are the three cases in which I have performed this operation.

CASE 1.—A boy aged fourteen years came to the West London Hospital in April, 1892. For two years he had worn a right inguinal truss. The left testis was in the scrotum, but the right organ was absent. On making the boy cough a body feeling like a testicle could be distinguished in the inguinal canal and a distinct impulse was felt. The truss was left off in the hope that the testis might descend; this, however, did not occur, so an operation was advised and was performed on July 12th. The inguinal canal having been opened up, a testicle of small size was found and the operation completed as described. There was a communication with the peritoneal cavity, so the upper part of the tunica vaginalis was tied and the internal ring closed. On the 13th the elastic tubing was shortened half an inch. The boy had some pains which was controlled by morphia. The next day the elastic tube was shortened a quarter of an inch. There was no pain, but there was some extravasation of blood in the scrotum. On the 17th the dressing was changed and the wound was healed. As there was some swelling and ecchymosis of the penis the cage was removed. The testicle was at the bottom of thy scrotum. On the 23rd there was some discharge of treacle blood from the puncture at the bottom of the scrotum. On the 27th both wounds were healed and the boy was able to

[1] A paper read at a meeting of the West London Medico-Chirurgical Society, Jan. 6th, 1893.

get up. In January of this year the right testis was in the scrotum and had increased in size. There was no impulse in the groin on coughing.

CASE 2.—A boy aged fifteen years came to the West London Hospital in September, 1891. The left testis was in the inguinal canal, but could be pushed out of it. There was an impulse on coughing and a history of a hernia, so a Wood's truss was ordered and worn till his admission into the hospital in July, 1892. When the truss was taken off, the testicle, which was very small, immediately retired into the inguinal canal. On July 19th the testicle was brought down by operation, a radical cure of the hernia being done at the same time. The following day the elastic tube was shortened. The boy was free from pain. By the 27th the wound was healed, when the cage and sutures were removed. The testis was at the bottom of the scrotum. The patient was discharged on Aug. 5th. At the beginning of January of this year the testis was in the scrotum, well below the root of the penis; though small, it had increased in size. There was no impulse on coughing.

CASE 3.—A man aged twenty-eight consulted me in July, 1892, after having been treated by electricity with no benefit. The scrotum was ill-developed and empty; the right testicle was inside the external ring, but could be pushed out and just pulled into the scrotum, though it immediately returned inside the ring when traction was discontinued. The left testis was inside the inguinal canal and could not be pushed out at all. There was also an impulse on coughing on this side. The patient insisting on having both sides operated upon at the same time, I proceeded to do so on July 31st. On the left side the fibres of the external oblique had to be divided; the tunica vaginalis was then opened and found to be quite shut off from the peritoneal cavity; but on separating the vas from the epididymis an acquired hernial sac was found behind the cord—this was isolated, ligatured and cut away. The traction thread was passed through the vestigial remains and the operation completed in the usual way. There was no hernia on the right side. As I did not think it necessary to separate the vas from the epididymis I only divided the tunica vaginalis and the fibres of the cremaster and did not insert the testis. In that way the spermatic artery escaped division. The stitch was passed through the peritoneum at the bottom of the testicle. The cage having been applied, both the traction threads were attached to it by separate pieces of tubing. The patient did not complain of any pain after the operation; the elastic tubes were both tightened up on the first and second days and the wound healed by first intention. The cage was removed on Aug. 7th and the patient went home to the country on Aug. 12th with both testicles at the bottom of the scrotum. He wrote to me in December informing me that both the testes were still well down in the scrotum and that they had not wasted at all.

With regard to the employment of traction on the testes by means of a thread attached to a wire cage resting on the groin, I find on looking up the subject that Mr. Watson Cheyne has recommended a similar procedure. He has reported [2] the case of a child aged eleven years on whom he operated in this way, but he passed his traction thread through the structures of the cord above the testicle. Traction in this position in an adult would probably be painful before the genital branch of the genito-crural nerve had been divided. I think the best point in the testis through which to pass the thread is the position of the vestigial remains at the top of the normal organ; this part is inextensile and cannot be damaged by the stitch cutting through. It has been recommended that the stitch should be passed through the tunica albuginea, but, if it were to cut through, a hernia testis might result and orchitis would be almost certain to follow. The tunica vaginalis is too extensile for the purpose of traction. Mr. Cheyne in his operation used a catgut stitch tied directly on to the cross arm of his cage, but I think that the intervention of a piece of elastic tubing provides more continuous extension. It would appear that the vitality of the testis might be affected, after the separation of the structures of the cord, by the division of the spermatic artery and veins, but Mr. Bennett [3] has pointed out that, though in nearly all operations for varicocele a portion of the spermatic artery is excised, the testicle does not atrophy, and he states that, as long as the artery of the vas is not interfered with, the division of the spermatic artery is of no consequence. He further mentions three operations for the radical cure of congenital herniæ during which the whole cord, including the vas, was accidentally divided without being followed by any alteration in the size or consistence of the testicle. The utility of preserving these partially developed organs may be called into question. In the case of boys about to enter the public services it is important that a testicle should not be removed during an operation for the radical cure of a hernia, as the absence of that organ might cause rejection at the medical examination. In each of my cases the testis, though still smaller than its fellow, has increased in size since the operation, and at any rate, if these organs are not sure to be functionally useful, their presence in the scrotum will contribute to the peace of mind of their owners.

As before mentioned, in former times it was the practice to remove a misplaced testicle when contemplating a radical cure of hernia, but as early as 1879 Professor Annandale [4] reported a case where the testis was preserved with success by operating under antiseptic precautions. In this case the organ was stitched to the bottom of the scrotum. Professor John Wood, in his lectures at the Royal College of Surgeons in 1885, mentions several cases of hernia complicated with retained testis; in some he removed the testicle, but in others he freed the gland and fixed it at the bottom of the scrotum by a stitch passed from outside through the testis and tied over a carbolised pad. He also was the first to recommend inversion of the testis in the way which I have described. M. Lucas-Championnière [5] claims to be the first surgeon who undertook an operation for the cure of a case of undescended testis uncomplicated with hernia. He operated upon a cryptorchid aged ten years, whose testicles could only be made to enter the inguinal canal by pressure. Having cut down upon and freed the testicle from everything except the vas and the spermatic artery, he stitched up the inguinal canal and the upper part of the scrotum; another stitch retained the testis in the scrotum. Ultimately the position of the glands was at the root of the penis, but the child's general development improved. M. Lucas-Championnière lays great stress on freeing the testis from what he calls adhesions and then closing the upper part of the scrotum and the external ring so as to prevent it from receding after the operation.

M. Tuffier [6] recommends repeated tractions to partially descended testicles, and by these means, in infants, has often effected a cure; when unsuccessful he cuts down on the organ and stitches it to the bottom of the scrotum, passing the sutures through the tunica albuginea. The cure is completed by daily tractions on the testis made by the surgeon or by the parents.

My colleague Mr. Keetley, at a meeting of the West London Medico-Chirurgical Society, showed a boy on whom he had operated by another method; after freeing the testis the tunica vaginalis funiculi was separated from the tunica vaginalis testis and the latter sutured over the testicle. A puncture was then made at the bottom of the scrotum, and a piece of the tunica vaginalis having been dragged through was temporarily sutured to the deep fascia of the thigh exposed by a small skin incision. The result was very satisfactory, but I should think that the tunica vaginalis is too extensile for traction and that attachment of the testis to the thigh is likely to be painful. In conclusion I maintain that in no case of radical cure of hernia complicated with undescended testicle should that organ be removed unless manifestly diseased, since with antiseptic precautions there is no additional risk in bringing it down into the scrotum. When no hernia is present and a boy has reached the age of from ten to fourteen years without having both his testicles in the scrotum an operation should be undertaken to bring down the missing organ. In those rare cases where the testis is placed in the perineum I should recommend a similar operation.

Bentinck-street, Cavendish-square, W.

[3] Brit. Med. Jour., vol. i. 1890, p. 251.
[2] THE LANCET, March 7th, 1891.

[4] Brit. Med. Jour., vol. i. 1879, p. 17.
[5] Bulletin de la Société de Chirurgie, 1887, p. 658.
[6] La Semaine Médicale, 1889, p. 125.

DOUBLE OVARIOTOMY FOR MULTILOCULAR CYSTS PERFORMED DURING AN ATTACK OF PERITONITIS.

BY JOHN CAMPBELL, M.A., M.D., F.R.C.S. ENG.,
SURGEON TO THE SAMARITAN HOSPITAL FOR WOMEN, BELFAST.

A SINGLE lady aged about thirty-five had good health till August, 1892. She then noticed a painful swelling in the lower abdomen, which disappeared after a few days' rest in

bed and the use of aperients. It occasionally came and went until December, when it became permanent. From this time forward it gradually increased, growing upwards on the right side, and it was rendered painful and tender by much walking. In February, 1893, active exercise brought on a severe attack of pain and tenderness and the swelling rose above the waist. Thenceforward she was confined to bed, where she lay propped up on pillows with her thighs and legs flexed. The pain was so severe as to demand the constant use of opium. Menstruation had been regular until the beginning of the present year. Since then there had been a weekly or fortnightly loss. The urine was scanty and the bowels were confined. On March 13th the patient looked thin and worn. The abdomen was generally distended, but more prominent on the right side, and tense, fluctuating and tender, especially in the left iliac region. The percussion-note was clear in both flanks and in the left hypochondrium; elsewhere it was dull. Vaginal examination detected a small polypus projecting from the os and a smooth resisting mass in the sacral hollow. The sound passed an inch and a half. A fortnight previously her medical attendant had found the abdominal tumour to be freely movable and quite ovarian in character. As the temperature continued above 100° and the patient was clearly losing ground, the operation was performed on March 15th with the assistance of Drs. Boyd, M'Kinney and Graham. A two-inch median incision allowed some dark turbid fluid to escape and exposed the tumour, four loculi of which yielded thick yellow ovarian fluid, whilst a fifth, which corresponded to the area of greatest tenderness on the left side, was filled with blood clot. Numerous soft adhesions bound the tumour to the cæcum on the right and to the sigmoid flexure and anterior abdominal wall on the left side. These gave way without serious bleeding and the pedicle was found to the right of the uterus. The incision was now enlarged to three inches and the tumour extracted; its pedicle was very thick and vascular and was transfixed twice before the Stafford knot was tied. When the tumour had been removed a second multilocular cyst, which had developed in the left ovary and filled the pelvic cavity, was taken away, and several small fibro-myomata were felt in the uterine walls. The peritoneal cavity was then cleansed with hot water and the wound closed with silkworm gut. In the after-treatment no morphia was required. The patient vomited four times and needed the catheter three times. The temperature fell on the third and became normal on the fifth day. The wound had healed throughout when first looked at on the fifth day, and the sutures were removed on the sixth day.

Remarks.—The case is interesting for several reasons. Both ovaries were cystic; the peritonitis was cured by the removal of its cause; the point at which inflammation was most severe corresponded to a part of the cyst which had evidently been injured and which contained blood-clot; no drainage was needed; the presence of the small uterine fibroids explained the existence of the metrorrhagia, and the operation should stop their growth.

Belfast.

SURGICAL AID SOCIETY (MANCHESTER BRANCH).—The formation of branches of this Society in provincial towns is a new effort, but the Manchester branch, which was formed last February, is now in working order, fulfilling its object in a most satisfactory manner. Funds, however, are urgently needed, and a circular appealing for help has been issued by the branch.

TOMATOES UNFIT FOR FOOD.—A salesman of Covent-garden appeared before Mr. Lushington at Bow-street on Monday last in answer to a summons charging him with selling seventy-two boxes of tomatoes unfit for human food. A Mr. Scott, of Richmond, bought the tomatoes after inspecting one box. On examining his purchase, however, he found that all the other boxes contained rotten tomatoes. On his complaining to the defendant he was told that he would have to make the best of them. Mr. Scott then took the tomatoes to one of the sanitary inspectors in the employ of the Strand Board of Works. They were condemned by Dr. Allan, the medical officer, and afterwards destroyed by order of the magistrate. Mr. Lushington said it was perfectly certain that the tomatoes purchased by Scott were more or less rotten and unsound. It was absurd to say that they could become over-ripe in a few hours. Defendant would have to pay a fine of £20 and costs; in default of distress, one month.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

NORTH-WEST LONDON HOSPITAL.

LOCULATED PLEURITIC EFFUSION; NECROPSY; REMARKS.

(Under the care of Dr. DONALD W. C. HOOD.)

THE importance of this case from a clinical point of view is considerable, for it shows a cause not usually recognised of the so-called dry tapping in pleurisy—the entry of the aspirating needle into a dense septum between loculi. It also shows the difficulty in treatment which these cases present when it is proposed to employ aspiration of the fluid, which is possibly in considerable amount. The anatomical condition of the left chest explained completely the conflicting physical symptoms which had been noted before death, and which might have been accounted for by a new growth or by consolidation of the lung; indeed many who examined the patient's chest considered that the presence of fluid was contra-indicated.

A man aged thirty-eight, belonging to the Army Reserve, was admitted into the North-West London Hospital on April 16th, 1891. He was severely ill, suffering from dyspnœa. He stated that a month previously he had been wet through, had a rigor and pain in the chest, and was confined to bed for nine days. Feeling better he resumed his occupation and, with the exception of a few days, had been up and about till the day of admission. On admission the man was seriously ill. The respiration was 58, temperature 102° and pulse 120; the left chest was dull from the base to the apex, and the physical symptoms were somewhat equivocal and conflicting, the balance after very careful examination being in favour of a large effusion. The cardiac sounds were faint and almost inaudible, but the heart was apparently beating at mid-sternum. An aspirating needle was inserted in three different spots but without obtaining any evidence of fluid. A fourth puncture produced four ounces of clear serum. On the following day there was evidence of pleurisy on the right side, the dyspnœa increased and the man died in the early morning of April 18th.

Necropsy.—The left pleura was much thickened and the lung compressed, the pleural cavity being occupied by numerous loculi, separated from one another by dense fibrous bands, some of which were at least half an inch thick. These loculi were filled with clear serous fluid, the largest lying on the posterior portion of the diaphragm and containing many ounces of it. In addition there was evidence of recent pleurisy on the right side and there was a large pericardial effusion (eight ounces). The course of the needle was followed. The three first punctures had plunged into the dense fibrous septa which divided the loculi. The fourth alone reached fluid, but unfortunately penetrated one of the smallest cavities.

Remarks.—Perhaps the most remarkable point about this case was the fact that the man had been following his ordinary occupation almost up to the day of admission and that he considered his inability to do so was in consequence of his swollen legs, which had been considered as the result of attacks of gout from which he had suffered on several occasions.

YORK COUNTY HOSPITAL.

A CASE OF TRAUMATIC SARCOMA OF THE SKULL.

(Under the care of Mr. HEWETSON.)

THIS case is a good example of so-called traumatic malignancy, the development of a tumour possessing the characters of a malignant growth in one of the bones or in some other part of the body arising not long after the injury, which has usually produced an extravasation of blood at the part struck. In many instances the disease has manifested itself before

the swelling produced by the effusion of blood has passed away and run a rapid course. Usually the tumour has been a sarcoma, but epithelioma is said to have originated in this manner. There have been various theories advanced as to the way in which the traumatism influences the formation of these tumours: (1) that there is probably a strong predisposition to the development of tumours in the persons affected, which thus break out on the application of violence;[1] (2) that it might be in some organism accidentally circulating in the blood, causing acute disease by infiltrating the cells of the part when the latter are stationary by effusion in the tissues;[2]

FIG. 1.

and (3) that there is some dynamic influence of the injury in those tissues which control the development of the reparative material and which shows itself by arresting the development when the tissue formed is immature and when the cells are endowed with a great power of growth.[3] For the account of this case we are indebted to Mr. Lendrum, late house surgeon.

On Nov. 24th, 1892, a boy five years old was admitted into the York County Hospital on account of a large cystic tumour on the left side of the head. The history of the case and the subsequent diagnosis and confirmatory post-mortem

FIG. 2.

examination are of great interest in the question as to how far injury plays a part in the causation of sarcomata. The patient had been a healthy boy until he received the injury resulting in the enormous tumour which subsequently developed, never having suffered from any serious illness or shown any signs of organic disease. About the middle of August, 1892, he was playing with a schoolfellow, the amusement consisting of throwing sand and subsequently stones at one another. This proceeded merrily until the patient was struck on the left temple with a half-brick, when the game came to a sudden end. The patient immediately ran home crying, complaining of the blow, and a large bruise was noticed under the skin, which was unbroken. This received treatment by fomentations, but though the swelling subsided somewhat it did not disappear; some-

FIG. 3.

times it seemed to increase and sometimes to decrease in size. At the end of September the case came under treatment at the York Dispensary, where it was regarded as a hæmatoma for some time and compression and aspiration were used with partial success. The tumour, however, developed at last a more rapid growth, and as it became very soft and threatened to burst the boy was sent to the hospital. A week before admission the swelling was about the size and shape of a cricket ball and was situated above the left zygoma, extending horizontally from near the eyebrow to the ear and vertically from the attachment of the temporalis to the zygoma. On admission the patient was found to be quiet and sleepy, his muscles were flabby and he

FIG. 4.

was in a very pale, anæmic condition; he was fairly well nourished and showed no signs of disease except the tumour on the side of the head. Over the left temporal region was a large, perfectly smooth, cystic tumour about the size of a "bowler" hat, very soft, yet very tense. The skin over it was tense and shiny, was dusky at parts like the skin over a large sarcoma and many dilated veins were to be distinctly seen under it. The cutaneous capillary system was much engorged. The tumour extended (Figs. 1 and 2) from near the outer

[1] Butlin: Brit. Med. Jour., 1882, p. 403. [2] Cripps, ibid., p. 653.
[3] Pearce Gould, THE LANCET, vol. ii. 1885, p. 1037. See also Barwell, Brit. Med. Jour., vol. i. 1882, p. 187; Walter, ibid., p. 458; Puzey ibid., vol. ii. 1882, 837; Ormsby, THE LANCET, vol. ii. 1884, p. 138; THE LANCET, vol. i. 885, p. 1035

canthus of the eye to about two inches behind the ear, which was lifted clean away from its attachment to the skull; it reached below to about half an inch below the zygomatic arch and its upper margin, which was well defined, curved round at an average distance of an inch and a half from the centre line of the head. When seen with the face *en profile* it bulged forwards, hiding the left eye and the bridge of the nose. Seen from the front (Fig. 2) it drew the left eyelids outwards to quite twice their normal length, thus leaving a mere slit through which the eye could be seen. The measurements of the tumour were as follows: The longest vertical surface measurement was 8¼ in., the longest antero-posterior surface measurement was 8½ in., and the circumference round the base of the tumour was 18 in. The movements of the child's face were not much affected, except that the mouth could only be opened to the extent of half an inch. Two days after admission Mr. Hewetson decided to aspirate the tumour in order to relieve the tension and to clear up the diagnosis between hæmatoma and sarcoma. A small-sized trocar was accordingly pushed into the tumour, but beyond a few drops of blood nothing came out of the cannula, which was therefore removed. It was found to be blocked by soft tissue, which was immediately teased out, stained and examined under the microscope. It was found to consist almost entirely of small round cells, what little matrix there was being slightly granular or homogeneous. There was no evidence of any fully formed fibrous tissue and a diagnosis was made of small round-celled sarcoma, following injury. It was evident that nothing could be done in the way of operation to relieve the child, who remained in the hospital until its death on Jan. 15th, 1893. The course of the disease was as follows. At first the child was without pain, though as the tumour grew its weight became a source of great trouble to him. At rare intervals (only three or four times) the child had single attacks of vomiting, not preceded by nausea and without definite cause. Restlessness gradually set in, increasing day by day, so that the patient had to be kept more or less under the influence of chloral until about a week before his death, when he became quite apathetic, with an extremely weak pulse and slow respiration. The right eye became quite anæsthetic and the pupil dilated and immobile. The right optic disc soon showed evidence of neuritis, which passed rapidly into atrophy. As the tumour increased in size it invaded more and more of the forehead and left cheek until the left eyeball was pushed well up against the inner wall of the orbit, and then the cornea sloughed and the eyelids became affected with the disease. The only sounds the child uttered during the last fortnight were short, sharp, single cries. Four days before death he scratched a sore over one of the large veins coursing over the surface of the tumour and venous oozing continued steadily afterwards. Between the eyelids the diseased tissue bulged out like an egg. This is shown well in Fig. 3, which, with Fig. 4, was engraved from photographs taken a few hours before death occurred. The measurements increased at the following rate:

	Nov. 28.	Dec. 5.	Dec. 27.	Jan. 10.
Longest vertical surface ..	¾ in.	1½ in.	1 in.	3 in. = 14½ in.
Longest antero-posterior surface	1½ in.	1¾ in.	½ in.	4½ in. = 16½ in.
Circumference round base	0 in.	½ in.	1½ in.	4½ in. = 25 in.

These figures show that the tumour developed a faster rate of growth during the last two weeks than the whole of the preceding month.

The post-mortem examination consisted merely in the removal of the tumour *in situ* by sawing through the skull outside the disease. The right side of the brain was unaffected by disease; the left side was almost undistinguishable from the rest of the tumour, as it was almost entirely diseased, the only free part being the upper—i.e., the higher—parts of the white and grey matter of the cerebrum. In removing the tumour the cerebral portion of disease fell entirely away, being extremely pulpy. The lower portions of the frontal, parietal and temporal bones were quite eaten away, and the disease, external and internal to the skull, was continuous. After being six weeks in spirit it weighed 6 lb. On making a section through the tumour it was found that there was no cystic cavity. The tissues immediately under the skin were reduced to blood-stained pulp, and the mass of disease under it was pale, though in places the vessels had ruptured and the blood and sarcomatous tissue was not to be distinguished. All trace of the left eye had vanished except a small portion of the sclerotic.

Remarks by Mr. LENDRUM.—The above case makes one ask, In what way do sarcomata develop after injury? It is acknowledged that sarcomata develop after injury, but according to Billroth no sarcoma "has ever been caused *intentionally* by mechanical influences." In 99 cases out of 100 the bruise after such a blow as this boy received would have subsided and no ill results would have followed; yet in this case after a hæmatoma had undoubtedly occurred sarcomatous disease set in with fatal results. I cannot find any explanation of the fact that sarcomata follow injuries, but I think a distinct connexion can be traced between the anatomical structure of a sarcoma and of the reorganisation of bruised tissues. The place of the blood-clot (Hamilton) is taken by new vascular loops and connective-tissue elements. These latter are at first small round cells, and only in the course of a few weeks do they become converted into fibrous tissue. If this process of development from cells to full-grown tissue be delayed or prevented have we not the very essence of sarcoma? I conclude that in this case the attempt at repair proceeded to the stage of the formation of embryonic connective tissue, and that from some unascertainable cause, possibly some inherent predisposition, these small round cells remained in their embryonic state, proliferating and increasing until death occurred.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

The Use of Atropine in Cholera.—Carcinoma of Thyroid Gland.

THE last ordinary meeting of this Society for the present session was held on June 13th, the President, Sir ANDREW CLARK, in the chair.

Dr. LAUDER BRUNTON read a communication on the Use of Atropine in Cholera. In 1873 he had drawn attention to the close resemblance between the symptoms of cholera and those of muscarine poisoning. The action of muscarine was almost completely antagonised by atropine, so that the symptoms produced by the former poison were removed by subcutaneous injection of the latter. Dr. Brunton therefore came to the conclusion that good results might be hoped for in cases of cholera poisoning by the subcutaneous injection of atropine; but the first opportunity he got of testing the supposition occurred a few months ago in the case of a patient who had come across from Hamburg. The father of this child died very shortly after admission into the hospital. The child was collapsed and appeared likely to die, but a subcutaneous injection of atropine revived her for a time. This was followed by a relapse, but another injection was administered with good results and the child recovered. At no time either in the child's case or her father's did the stools present an appearance of rice water, but cholera bacilli were found by Dr. Klein in the intestine of the father. Dr. Brunton suggested that there were various forms of cholera and that atropine would probably be most useful in cases where cholera appeared to have an action on the circulation and less useful in those cases where the intestine was chiefly affected, because Dr. Pye-Smith and he did not find in their experiments secretion from the intestine to be arrested by atropine.—The PRESIDENT remarked that Dr. Brunton possessed a high degree of physiological and therapeutical instinct which enabled him to anticipate much, not only in the way of experimental research, but also in the field of clinical observation. On these grounds, if on none other, he was entitled to bring his observations on a single case before the Society without apology.—Brigade-Surgeon SCRIVEN said that a powerful remedy capable of hypodermic administration was what was wanted in the treatment of cholera. He regretted his ignorance of the physiological action of muscarine, but certain of the symptoms of cholera—the cramps in the limbs and the spasm of the common bile duct—suggested that the causes of these might be counteracted by atropine. The paper not only raised the question of the diagnosis of cholera, but suggested that there were various forms. During his twenty-eight years' service in India previously to 1879 he saw a vast number of cases, but could only recognise one form, and he regarded the rice-water evacuations as the most constant and characteristic symptom. He admitted that there might be the

greatest variety in intensity, from a mild diarrhœa to the formidable and rapid collapse with early death, but the mild cases were apt to pass into the severer forms. The diagnosis was impossible where there was no purging or where the diarrhœa was only bilious. In many organic poisons, such as those in decomposing fish and meat, and in the collapse after malarial fever there were produced symptoms like cholera; but the urine did not appear usually to be suppressed and the stools were not of rice-water character.—Dr. PYE-SMITH said there was a question whether these cases were instances of true Asiatic cholera. The finding of the comma bacillus or vibrio he regarded as a good diagnostic mark whether it was the cause of the disease or not. He held that it was not good to insist on any one pathognomonic sign in cholera; the fæces were colourless simply because all the food had been washed away from the intestine and a precisely identical condition could be produced experimentally in animals by exciting an excessive secretion of succus entericus. If the phenomena of cholera were only or chiefly due to excessive diarrhœa it followed that though the atropine might not cure the diarrhœa, yet it might be valuable for the beneficial results produced on the respiration and circulation, and it could be prescribed with advantage also in the cases of very severe diarrhœa such as were usually termed English cholera.—Dr. PATTERSON said he had seen these cases on their first landing and had attended them until their admission into hospital. He had had experience of a severe cholera epidemic in Chili in 1887-88 and he asserted that the first case described in the paper exhibited typical symptoms when he first saw it, there being a constant passage of rice-water evacuations which were then quite colourless; the temperature was 96·6° F. and the pulse 110; the patient was blue and shrivelled and the urine suppressed. The child when he saw it was only suffering from premonitory diarrhœa.—Dr. ORMEROD, who made the necropsy on the adult, said that the face was shrivelled, the blood tarry, the lungs and internal organs shrunken and light of weight. The intestinal contents were distinctly coloured and appeared to contain bile. He likewise examined a few days ago a man who died of violent diarrhœa, but the face and organs were not shrivelled and the blood was liquid. The intestinal contents were mucous in character and contained no comma bacilli.—Dr. LAUDER BRUNTON, in reply, said that Brigade-Surgeon Scriven's remarks to some extent bore out his suggestion that there might be more than one variety of cholera and in one at least of these atropine might be useful. In the case with rice-water stools no less than nine kinds of bacilli had been found, varying so much that they were looked on as distinct species.

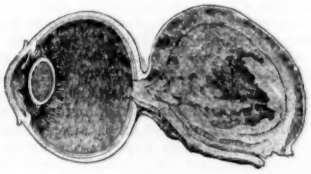
Dr. FELIX SEMON then related the details of a case of Malignant Disease of the Thyroid Gland, with most unusual course. The patient was a female aged fifty-two, who suffered from dyspnœa and occasional hæmoptysis, supposed to be due to the pressure of a hard goitre upon the trachea. On laryngoscopic examination an ulcerating mass was seen in the tube itself. Tracheotomy was performed, and after a curious attack of cardiac irregularity, rise of temperature, expectoration of brownish-red masses, and spasm of the glottis, which occurred a week after the operation, the patient recovered from the latter. Ten months afterwards she was greatly emaciated, but otherwise surprisingly well, and the intra-tracheal tumour had so completely disappeared that two other observers advised removal of the enlarged right lobe of the thyroid, which they supposed to merely press upon the trachea, with the view of dispensing with the wearing of the cannula. This operation, which was performed by Sir William MacCormac, could not be finished, because it was found that the centre of the goitre had undergone malignant degeneration and had perforated into the trachea. From this exploratory operation the patient again recovered and lived a full year afterwards, finally dying from intra-tracheal hæmorrhage and suffocation. The post-mortem examination explained the unusual course of the disease, there being, besides a large somewhat pedunculated extension of the external tumour into the trachea, a second smaller ulcerated tumour hanging down from a thread-like pedicle more than one centimetre long and separated by a distinct interval of normal mucous membrane from the upper limit of the pedicle of the larger growth. He showed the specimen. Had this smaller growth sloughed away at the insertion of its pedicle, practically no trace of its existence would have been left, and a similar explanation no doubt obtained for the disappearance of the larger tumour originally seen during life. The growth, on microscopical examination, proved to be an encephaloid carcinoma. Dr. Semon commented on the case and its unusual features—viz., (1) the temporary total disappearance of the intra-tracheal extension of the thyroid growth; (2) the curious attack, probably due to irritation of the right pneumogastric nerve observed after the performance of tracheotomy; and (3) the fact that malignant growths of the thyroid, when perforating into the trachea, appeared to have a tendency to become pedunculated, which he illustrated by another case observed by him.

OPHTHALMOLOGICAL SOCIETY.

Tumour of the Optic Nerve.—The Combined Method of Cataract Extraction.

AN ordinary meeting of this Society was held on Thursday, June 8th, the President, Mr. HENRY POWER, M.B., F.R.C.S., in the chair.

Dr. ROCKLIFFE of Hull read notes of a case of Tumour of the Optic Nerve. The patient, a male aged twenty, was shown to the Society in March, 1892, as a case of monocular proptosis. In December, 1892, as he was emaciated, anæmic and losing weight, the eyeball and growth were removed *en masse*. Mr. Treacher Collins examined the specimen and reported as follows: "The tumour is situated in the region of the optic nerve and is covered by a distinct thin capsule, which is continuous with the sclerotic and is apparently the expanded dural sheath of the optic nerve. The tumour is oval in shape and about equal in



size to the eyeball itself. Its longest diameter measures twenty-seven millimetres and its narrowest twenty-one millimetres. It is of a greyish fawn colour. An antero-posterior vertical section showed the parts of the eye in their normal position and apparently healthy; the vitreous is of good consistency, the optic disc not swollen. The growth commences two millimetres behind the globe, expanding the dural and pial sheaths and pressing the lower portion of the nerve downwards; this is seen as a distinct white band running along the lower border of the growth." Microscopically Mr. Collins describes the tumour as consisting of nucleated cells, which have numerous delicate branching processes, interlacing with one another and forming a network the spaces of which are of very different shape and size; in addition, there are bundles of closely-packed nucleated fibres and a few thin-walled bloodvessels. Both pial and dural sheaths encircle the growth. The appearances resemble very closely those seen in gliomatous tumours of the brain and the tumour probably originated in the neuroglia of the optic nerve. Dr. Rockliffe referred to the rarity of such tumours, quoted cases recorded by Brailey, Hulke, Lawson and others, and considered the symptoms of tumour of the optic nerve to be: slowly but progressively increasing proptosis and loss of vision, with absence of pain and constitutional derangement, the external appearances of the eye and fundus oculi being normal, with the exception of proptosis and dilated retinal veins and possibly some atrophy of the nerve, accompanied with symptoms of posterior pressure on the globe. If the tumour sprang from the sheath the displacement would probably be forwards and non-central, and the movement of the globe limited; but if from the nerve the proptosis would be central, with no limitation of movement of the globe. He suggested the advisability of taking the field of vision in such cases as likely to lead to more exact diagnosis. The paper was illustrated by specimens and drawings.

Mr. SWANZY read a paper on the Combined Method of Cataract Extraction. He advocated the combined in preference to the single method for the extraction of cataract and reported on 100 consecutive operations for uncomplicated senile cataract by the former method. The

results obtained were: ninety-five good, two medium and three failures. The three failures were due to iritis. The accidents and irregularities which occurred during the operation were: Loss of vitreous in small quantity twice; hæmorrhage in the anterior chamber such as to interfere with the normal progress of the operation, three times; section too short, four times—in two of these it was lengthened with scissors. Some cortical remains were left twenty-seven times, but in all except three they were insignificant in amount. Reflex vomiting during and after the operation was seen twice in different patients. No case of suppuration occurred, careful antiseptic measures being regularly employed. There were six cases of plastic iritis. Marked striped keratitis occurred six times, besides frequently in slighter degrees, but in no instance did it leave permanent damage behind it. The incision occupied the upper third or a little more of the corneal margin. A coloboma of about 3·5 millimetres was made and great pains were taken to reduce each of the pillars into the anterior chamber completely. Such a coloboma was sufficient to obviate secondary iris prolapse by providing a way of exit for the aqueous behind the iris when the wound happened to be ruptured during the first few hours of the healing process. In this series incarceration of the iris occurred only once, and that was in one of the cases where reflex vomiting took place. As one of the final steps of the operation Mr. Swanzy laid much stress on search with forceps for any tag of capsule which might lie in that part of the wound which corresponded to the coloboma. If such a tag was captured it was drawn out and snipped off and thus prevented from becoming incarcerated in the wound during healing. In eighteen instances out of the 100 capsule was found in the wound and abscised.—The PRESIDENT, in thanking Mr. Swanzy for his paper and congratulating him on the excellence of his results, said that in extraction of cataract he much preferred the simple operation and believed he obtained better results therefrom than by the combined method. He mentioned a case in which serious damage to the cornea followed the prolonged use of a strong solution of cocaine.—Mr. CRITCHETT gave expression to his adherence to extraction by the combined method. He referred also to the danger to the cornea resulting from the too free use of cocaine. For some time he had been in the habit of anæsthetising the iris with cocaine applied on the cystotome before doing iridectomy, and with very satisfactory results.—Mr DRAKE-BROCKMAN stated that he had abandoned iridectomy in cataract operations since 1878. He had performed 4000 extractions by the simple method since that date, with prolapse of the iris in about 6 per cent. He associated striped keratitis with the too free use of cocaine, but thought injurious results were less marked when the lids were closed.—Mr. TWEEDY and Mr. ADAMS FROST expressed themselves as being in favour of the combined operation.—Mr. HILL GRIFFITH cited some of the results obtained at the Manchester Eye Infirmary, comprising over 1000 cases by both procedures. The figures, so far as they would bear comparison, were slightly in favour of the simple operation.—Mr. RICHARDSON CROSS thought it inexpedient to treat all cases indiscriminately by one method of operation. He thought the simple plan suitable for a large proportion of the straightforward cases and the combined method for others.—Mr. SWANZY, in reply, said that an exact opinion ought to be based on a careful comparison of results, which was sometimes at variance with a general impression. He thought the objections to iridectomy arose from too free excision, which led to more frequent prolapse of the iris and often to a coloboma so large as to be unsightly and disturbing to vision. These objections did not hold with a small iridectomy.

The following living and card specimens were shown:—

Mr. JULER: Microscopic Sections of Ciliary Sarcoma.

Mr. JOHN GRIFFITH: Specimens of a Tumour of the Ciliary Body.

Mr. HAYDON: Ruptured Choroid with Perforations of the Iris.

Mr. STANFORD MORTON: Pemphigus of the Conjunctiva.

Mr. MARCUS GUNN: Pemphigus of the Conjunctiva.

Mr. LAWFORD: New Growth in Ocular Conjunctiva.

Mr. DONALD GUNN: Congenital Ophthalmoplegia Externa in Two Brothers.

Mr. DOYNE: Drawing showing a Cherry-red Spot at the Macula.

Dr. ERNEST CLARKE: Nævus of Right Side of Face, Lids and Conjunctiva, with Cataract in Right Eye.

Reviews and Notices of Books.

Handbuch der Augenheilkunde. Von D. C. SCHWEIGGER, Sechste Auflage. (Manual of Ophthalmology. By D. C. SCHWEIGGER. Sixth Edition.) Pp. 511. Berlin: Hirschwald. 1893.

THIS is a student's manual, written by an accomplished practitioner who has had large experience as Director of the University Clinic of Ophthalmology in Berlin. The first edition was published twenty-two years ago and at once took a good position amongst similar treatises owing to the lucidity of the descriptions of the various forms of diseases of the eye and the clear views expressed by the author in regard to treatment. It is divided into three parts—the first dealing with the anomalies of refraction and the optical relations of the eye and strabismus, the second with diseases of the several tissues, and the third with the affections recognisable by means of the ophthalmoscope. The treatise is free from all debatable matter, so that, for example, such a subject as neuro-paralytic keratitis is dismissed in a few lines with but short comment on the cause of the affection and no directions as to treatment. On the other hand such subjects as glaucoma, purulent ophthalmia and sympathetic ophthalmia, and others of importance in practice, are given at considerable length. The directions for treatment are, as we have said, clearly given and are sound in principle.

The Structures in the Meso-salpinx: their Normal and Pathological Anatomy. By J. W. BALLANTYNE, M.D., and J. D. WILLIAMS, M.D. Edinburgh: Oliver and Boyd. 1893.

THIS monograph contains the results of the authors' examination of 220 broad ligaments. The description of the histology and pathology of the Fallopian tube has already been published, but their account of the normal and pathological anatomy of the other structures lying in the meso-salpinx now appears for the first time. The limits of the investigation are indicated by the title and the definition given of the meso-salpinx, which "is a double fold of peritoneum which is bounded above by the Fallopian tube, internally by the lateral wall of the uterus, externally by the tubo-ovarian fimbria and the ligamentum infundibulo-ovaricum of Henle, and inferiorly by the ovary and the utero-ovarian ligament." The authors are of opinion that the researches of Henle, Farre, Beigel, Wyder, Martin, and others have so thoroughly exhausted this domain of histology that little remains to be added to the descriptions given by those authorities. We observe on page 21 an interesting contribution to the question of the frequency of the cystic condition of the tube known as hydro-salpinx, hæmato-salpinx and pyo-salpinx. In sixty-one consecutive post-mortem examinations the authors found cystic dilatations of the tube nine times, or in 14 per cent. This percentage is very similar to that obtained by Dr. Lewers in examining 100 specimens—namely, 17 per cent. In both investigations hydro-salpinx was more frequently met with than either hæmato-salpinx or pyo-salpinx. Drs. Ballantyne and Williams are to be congratulated on having produced this little book, which is a mine of information on the subjects of which it treats.

Le Mouvement et les Exercices Physiques. By Dr. L. E. Dupuy, Médecin de l'Hôpital de Saint-Denis. Pp. 344. Paris: 1893.

IT is a matter of common criticism that physical education has not yet been placed upon a proper scientific basis and that those who profess to direct the fuller development of the body often know little of its structure and less of its rudimentary functions. It is not too much to assume that an instructor of a gymnastic class should possess some

knowledge of the anatomy of the movements he cultivates and that he should have some acquaintance with the physiology of motion, of muscular development, and of fatigue. The literature of the subject is meagre and not wholly satisfactory. Dr. Dupuy in the present volume attempts to satisfy this need. The book is intended for non-medical readers, for "professors" of physical education, heads of schools and others who are practically concerned in the well-being of children. It begins with a simple account of the skeleton illustrated with some very excellent woodcuts and then deals in a somewhat sketchy manner with the proportions of the body and its weight and growth. The anatomy of the joints and muscles is considered in some detail and the sections are very fully illustrated. The physiology of movement is dealt with in but a fragmentary manner. The anatomical part of the work calls for high praise. The part which is the most disappointing is that in which the various gymnastic movements are considered. These sections, which should form the most important part of the book, are somewhat superficial and incomplete. The author has introduced a great deal of unnecessary matter which in a future edition may well be eliminated. In such a work as the present there is little object in discussing the various diseases of bones and muscles, the forms and treatment of fractures, the methods of reducing dislocations and the more obvious details of physiognomy.

Chemistry for All, or Alternative Elementary Chemistry. By W. JEROME HARRISON, F.G.S., and ROBERT J. BAILEY. London: Blackie and Son. 1893.

THIS is one of those little works which invokes severe criticism from a great many reviewers because it is written "upon the lines of that syllabus." The syllabus referred to in this particular instance relates to the Alternative (*sic*) Elementary Chemistry of the Science and Art Department, the subject of examination of the annual "May Exams." In spite of the limitation of the subject-matter, which is necessarily involved when mere preparation for examination is the object and purpose of the writer, we venture to think that the little book before us might with profit be placed in the hands of all those desirous of a sound acquaintance with the rudiments of chemical science. It is clearly and simply written, the introduction of perplexing symbols and formulæ has been avoided, and many of the experiments, as will be obvious to the intelligent reader, may be performed with the simplest of materials The performance of one experiment, however, will probably puzzle and would certainly inconvenience most students; it is to dip (p. 17) a bucket into the river at London Bridge and measure out a gallon of the water for the purpose of studying the composition and nature of river water, the Thames being taken as a type. But altogether this contribution is a model of what elementary text-books of this class should be.

LIBRARY TABLE.

Guide to Lucerne, the Lake and its Environs. Published by the Official Commission of Traffic. Text worked out by J. C. HEER. With Illustrations, Plan of the Town, Map of the Lakes of Lucerne and Zug, Road Maps &c. Lucerne: H. Keller. 1892.—"The metropolis of the travelling world," as the chief town of the four forest cantons has been called, has had many descriptive guide-books devoted to it, but we have met with none so complete in every respect as this. And yet the book is by no means a bulky one and may be slipped into the coat-pocket or the travelling-bag with but small encroachment on their other contents. It has succeeded in combining fulness of detail with convenience of size by the judicious admixture of illustration and letterpress, the former minimising the latter at every point where pictorial or graphic indication can take the place of literary exposition. Its editor, Mr. Heer, has evidently pursued the method practised by the late John Murray and Karl Baedeker—he has seen everything for himself, accepting no statement unverified and recommending no excursion in which he himself has not taken part. The result is the eminently practical character of the book and the sense of confidence it inspires in the reader. One word as to the best mode of seeing Lucerne and its environs may not be out of place here. Crowded as the town itself is in the late summer or early autumn, the plan to adopt is that of making the excursions first and enjoying the scenery and the residence at the various points of interest whilst yet there is freedom from the pressure of the tourist world. The visitor will thus have enjoyed the attractions of the outlying resorts before his return to Lucerne, which in September or October, or even later, is a delightful place of abode, the hotels being then least frequented, whilst retaining all the service required and presenting none of the endless distractions of the constant coming and going of guests. We can speak from experience as to the delights of October, and part at least of November, in Lucerne—not the least of which are the tranquil enjoyment of the delicious autumnal air and scenery out of doors and the freedom from the noise and bustle of the mighty *table d'hôte* and overcrowded reading-room within. The railway map appended to the volume gives a clear indication of the routes from Italy to England—from Naples in the south to London in the north. By it the British members of the International Medical Congress can select their journey out or homewards, taking Switzerland both ways, but each time passing through a different part of it.

Détermination Pratique de la Réfraction Oculaire par la Kératoscopie ou Skiascopie. Par le Dr. BILLOT. Paris: Société d'Éditions Scientifiques, Place de l'École de Médecine. 1893. pp. 100.—This *brochure* gives the usual proceedings for determining the refraction of the eye by what in this country is usually termed "retinoscopy," which the author considers to be well adapted for the examination of the eyes of conscripts. The point on which Dr. Billot lays stress is contained in the following quotation: "When without the use of a correcting glass the shadow moves in any meridian in the opposite direction to the mirror this meridian is emmetropic or hypermetropic. In order to distinguish these two states experiment has taught and theory confirms that it is sufficient to place before the eye examined a + 1 D glass and to note the effect. ..... Three cases may present themselves. The shadow previously inverse in both vertical and horizontal meridians moves in the same direction with the mirror in both directions. It may then be taken for granted that both meridians are emmetropic; or, secondly, the shadow remains inverse in both meridians, in which case both are certainly hypermetropic; finally, the shadow previously inverse in both directions with the + 1 D moves in the same direction with the mirror in one meridian (say, the horizontal) and remains inverse in the other or vertical. It may then be taken that the horizontal meridian is emmetropic and the vertical meridian is hypermetropic, or that there is simple hypermetropic astigmatism in the vertical meridian." He says nothing of the employment of atropine, perhaps because it is not applicable to conscripts. Hence only rough approximations to the proper correcting glasses can be obtained.

ST. JOHN AMBULANCE ASSOCIATION.—The successful members of the King's-cross Branch of the Association were recently presented with certificates and medallions won by them in competition. The branch is of recent formation and Sir Henry Oakley complimented both the competitors and Dr. J. Brunton, who instructed them, on the skill displayed on the occasion.

THE LANCET.

LONDON: SATURDAY, JUNE 17, 1893.

THE public are very much indebted to Mr. COHEN and to Mr. GOSCHEN for bringing into the light of Parliament the problems connected with the working, under present conditions, of the Metropolitan Asylum Hospitals for infectious diseases. If the problems have not been created by Parliament they have been rendered very much more difficult of solution by legislation. It is so easy to legislate. The draftsman is always at hand and can construct in a few lines a clause in a Bill which will alter the theory of pauperism and involve the State or the ratepayers in additional taxation to the tune of hundreds of thousands of pounds. The pocket of the metropolitan ratepayer is supposed to be deep and he himself has been hitherto a much enduring man. So it has come to pass that, although scarcely aware of it, he has become theoretically chargeable with the cost of providing accommodation for the whole infectious disease of London, and in practice is already bearing the weight of over 50 per cent. of it. No less than 54·6 per cent. of all the notified cases of infectious sickness are now admitted into the hospitals of the Metropolitan Asylums Board; and there is no sign of any abatement in this demand. The statements of the Managers at their last meeting were somewhat startling. They said that it had been necessary to refuse admission to cases of both scarlet fever and diphtheria, and that "about 50 per cent. only of the persons requiring admission can be dealt with." It would be interesting to know whether this means 50 per cent. of cases so badly situated for purposes of attention and isolation as imperatively to need admission, or only 50 per cent. of all wishing for admission though having the means of isolation in their own homes. Mr. COHEN'S question, which was put on June 8th, was obviously intended to elicit the truth on this point. But the answer of Mr. FOWLER was unsatisfactorily vague. "He had inquired of the Managers of the Metropolitan Asylums Board, and he thought there was no reason to suppose that any appreciable percentage of the patients in the hospitals were persons who could properly be isolated in their own homes. A large proportion of cases were admitted on the recommendation of the sanitary authorities and medical officers of health." In answer to a suggestion that inquiry should be made as to the efficacy of the system in staying the disease in houses from which the patients are removed, the President of the Local Government Board said such an inquiry would involve much time and was not necessary.

Mr. GOSCHEN'S questions were based on the view that the demand for these hospitals is likely to increase more and more and that the Government should undertake to assist the Board in getting further sites for fever and small-pox hospitals. It is found that the representatives of the districts in which it is proposed to place these hospitals with one consent make excuse, and that nothing short of compulsory powers of purchase will enable them to keep pace with the demand for admissions. Mr. FOWLER, in reply intimated that the metropolis could no longer supply the space needed for this purpose. He would be happy to procure further legislation, if necessary, "as it was, in his view, quite impossible to confine the provision for these patients within the present metropolitan area."

These questions and answers emphasise the point on which we have long insisted: viz., that the law has placed on the Metropolitan Asylums Board a duty far larger than was ever contemplated by the original promoters of the Board and its hospitals. These hospitals were intended for the poor—for those dependent on the rates; in other words, for paupers. The change—the abolition of this particular form of pauperism—was not effected quite abruptly, as far as we understand. By the Poor Law Act of 1889 it was enacted that where persons were admitted into these hospitals who were not paupers, the expenses for their maintenance were to be paid by the guardians of the Union from which they were received, and that those guardians might recover the amount of the expenses. But by the Public Health Act of London, 1891, all this power of recovery from the person was abolished and the charge was thrown primarily on the guardians of the poor, who in their turn were to be repaid out of the Metropolitan Common Poor Fund. By Clause 4 of Section 80 it was enacted that "the admission of a person into one of these hospitals suffering from an infectious disease or his maintenance should not be considered parochial relief, alms, or allowance"; and "that no person by reason thereof should be subjected to any disability or disqualification." By admission for any other disease than an infectious one he would have to pay or incur the odium of receiving relief or alms; but not so where the disease is infectious, the theory being that he submits to isolation for the public good. The consequence of this theory is a wholesale rush to the metropolitan hospitals so that only half that "require admission" can be admitted, and London itself cannot supply sites for the necessary number of hospitals. The officials of these hospitals and the Managers—who deserve all praise for their labours—are much too busy in providing beds to make any inquiry into the circumstances of patients; and the sanitary authorities are naturally apt in a mechanical sort of way to send all infectious cases into these hospitals. This may be the right method, and it may be necessary to largely increase the accommodation; but is it certain that this is desirable? Have the clauses of the Act of 1891 not gone too far in altering the law of pauperism as respects maintenance in these hospitals? Are not the comparatively well-to-do availing themselves of the benefit of the hospitals to the prejudice of the really poor? We are not aware that in the provinces there is any such accommodation of the law of pauperism. It is only eleven years since a Royal Commission said that 3000 beds would suffice for the accommodation of the really poor. Now we have 4600 beds, and more than 50 per cent. of the patients who require admission have to be refused. We trust that Mr. COHEN and Mr. GOSCHEN will continue their questions to the Local Government Board till more light as to our real situation is obtained. The Board is responsible at least for the "regulations and restrictions" under which patients are admitted into the hospitals. It can surely find time to make such regulations and restrictions as will for the future secure an inquiry into the social circumstances of the applicants and

give preference to the poorest and the most straitened whilst discouraging the use of these hospitals by those who can be treated at home. To defer such inquiry and the making of such "restrictions and regulations" may be good politics, but it is bad policy.

BY Section 108 of the Public Health (London) Act it is provided that the salaries, duties and conditions of appointment of all medical officers of health in the metropolis appointed or reappointed from the date at which the Act came into operation shall be subject to the approval of the Local Government Board; but, save as regards the qualifications required of the officer himself, there is nowhere any indication of the terms on which, in the opinion of the Board, such appointments should be made, and there are obviously no means of compelling a local authority to offer conditions likely to be accepted as satisfactory. Clauses 100 and 101 do indeed provide for cases of non-performance of its duties by the local authority, but it would not, we fear, be easy to establish default when a board is perfectly willing to make an appointment on terms which have been accepted before, but which the confirming authority wisely, but none the less arbitrarily, refuses to sanction. Such a deadlock has existed in Hackney since the death of Dr. TRIPE, and a similar result is now threatened at Shoreditch. The Local Government Board have very properly maintained that £600 per annum is a minimum salary for the medical officer of health of a district having nearly a quarter of a million inhabitants, and strongly disapproves, under the circumstances of such a population, of the duties of public analyst being imposed on the medical officer of health. The Hackney District Board, on the other hand, alleges that only by the combination of offices can it afford to give an adequate salary, and even then it positively refuses to pay more than £500 at the outside for the combined offices, stoutly declaring that it will bring the Local Government Board to submission. The case of Shoreditch is perhaps less inexcusable. Its population does not exceed one-half that of the neighbouring district, and the late medical officer of health, who was one of the last officers appointed under the former *régime*, received £200 per annum, with permission to engage in other official and consulting practice. Here there is no question of analytical work, the point upon which the vestry and Local Government Board are at issue being that of salary alone. The District Board of St. Giles's and St. George's, Bloomsbury, which reappointed its medical officer of health on the new conditions some months before they became obligatory, granted him an initial salary of £600, although the population was less than half, and the rateable value of the district under two-thirds, of that of Shoreditch, and but one-fourth, and one-third, respectively of those of the Hackney district.

Such conflicts of opinion are certain to recur on the occasion of almost every future appointment, and it is in the highest degree desirable that the Local Government Board should endeavour to secure terms for the office which will ensure that every district is provided with the services of an officer of proper ability and attainments. The Local Government Board is evidently desirous that the London health service should consist of gentlemen who are free from the claims of private practice. The sanitary authorities do not dissent from the principle, but they are unwilling to pay salaries sufficient either to bring into their service those who possess the qualifications needed for the responsible work of protecting large populations from disease or to enable a professional man to live in the metropolis in a way befitting his position.

It is somewhat strange that this parsimony with regard to an office which undoubtedly requires qualities of a high order is, in some degree, the electioneering cry of those who profess themselves to be especially interested in the welfare of the poor. When it is recollected that the education of the medical officer of health is an especially costly one—that after he has completed the ordinary education of a medical man he is required to go through a further training before he is allowed to hold office in London—it is indeed surprising that he is expected to be tempted to enter a service which offers him such unremunerative and inadequate terms. We say it is strange that those who desire to benefit the working classes should adopt this course, because the usefulness of the service to the poor of London must largely depend on its being recruited, not from the more unsuccessful members of the profession, but from those whose abilities in any other branch of medical work would secure them an ample return. No doubt, whatever the salary offered, candidates will always be found for the office. Occasionally the desire to engage in an especially useful occupation is the motive power, at other times young men take a post with a view of securing a better one later on; but such chances cannot in practice be depended upon, and local authorities must as a rule rely upon the inducements they can offer to practitioners to seek the arduous work of the health officer. Without such inducements they must submit to an inferior service.

There can be no question, we think, that if authorities will not pay adequate salaries they had far better give the officer other opportunities of providing for those dependent on him, and all that has to be considered is the kind of occupation in which he can be permitted to engage. We assent at once to the principle that it is not in the public interest that he should engage in general practice, and we admit that there are but few metropolitan districts that do not demand the whole of the services of a health officer, but unless the public are prepared to pay salaries which will adequately remunerate competent men who are willing to devote all their time to the work, it is better that the officer should be permitted to hold other offices and take advantage of the opportunities which present themselves to those who have ability and energy rather than that the public should be served by men who have found that success will not attend their efforts in other branches of professional work.

Since the Local Government Act became law the London appointments have been watched with interest, and hitherto, certainly, the salaries offered have compared unfavourably with those given in a number of provincial centres and have not been worthy of the greatest city in the world. But they seem likely at the present time to become worse. It is greatly to be regretted that since the passing of the Local Government Act no effort has been made to set before the London sanitary authorities an example of more liberal recognition of the value of public health services, and hence we find important districts like Hackney and Shoreditch, containing many thousands of poor persons largely dependent on the

work of the health officer, satisfied to make appointments on terms which the Local Government Board is well aware cannot secure for them the services they ought to command.

It may be—and we contemplate the possibility with great regret—that the attempt to constitute a service in which the officers shall devote the whole of their time to their official work will have to be abandoned. We can view with some satisfaction an arrangement that does not altogether exclude the medical officer of health from other opportunities for enlarging his knowledge and keeping him in touch with professional work, but it will be greatly to be deplored if, as the outcome of the present desire to secure medical services more cheaply, the health administration of London should fall into less safe hands than those to which it is now entrusted.

IT is frequently asserted by the head-masters of large schools and others that boys working for competitive examinations require all their energy for the mental strain necessary to prepare them for such examinations and that their physical training has meanwhile to be neglected. Speaking generally, the tendency at public schools is, we imagine, in the opposite direction. A large amount of energy and time is consumed in out-door games and physical exercises of all kinds. This suits the generality of boys and is not displeasing to their parents if they happen to be well off and can afford it. The question arises, however, as to how far it is practicable to achieve success in both directions, and the reply to it involves some interesting physiological considerations. It cannot be denied, of course, that there are numerous instances of young men at our public schools and universities who achieve a large measure of success in both physical and mental directions; still, they are the exceptions and not the rule. For the *mens sana* the *corpus sanum* is also no doubt a physiological necessity; but a young man cannot serve two masters with equal keenness and zeal. If an undue amount of nerve force is expended in one direction it will not be available in another, any more than an excess of blood can be determined to two different parts of the body at the same time. The physical and mental training must be very carefully adjusted to obtain the best results in both directions at the same time. We feel quite confident that the mental work and strain, with the concomitant in-door confinement, entailed by a system of competitive examinations, is physically injurious in many ways, and that he is a very exceptional boy who achieves success in both directions at the age at which competitive examinations are usually undertaken. We are speaking now of the hard reading and hard thinking inseparable from preparing for these examinations, not of mental power or intellectual robustness, good judgment, mental freshness and originality of conception, for these qualities are natural gifts, which, as often as not, are weakened if not altogether destroyed by a "cramming" process, just as they are strengthened by hard physical work and wholesome occupation in the open air with copious draughts of light literature by way of mental diet. A very limited amount of hard reading suffices for such intellects to incubate results. The truth is that the man of "culture" and the book-worm frequently have no ideas of their own. They are mental parasites and live upon men's other thoughts, and even the ideas which seem to be their own are in reality unrecognised remembrances of the thoughts of others, whereas the relatively non-reading man has his own mental life; he has initiative, freshness and vigour of thinking if he has been endowed by nature, as he often has, with brain power. There is such a thing as an over-culture which is destructive of intellectual freshness and vigour. What is gained in literary style—in refinement and delicacy of expression—is lost in originality and strength; and the power of formulating new ideas is sacrificed to the polish of a period. A competitive literary examination, such as that for the Indian Civil Service for example, at the best secures high averages in mental culture; it does not necessarily secure—it may even exclude—young men of superior intellectual capacity whose powers mature later in life, and it is no gauge of qualities of character. But the point to which we would direct attention is this—that hard mental and physical exercises are, with rare exceptions, incompatible. Within certain limits the one aids the other, in that physical exercises and out-door pursuits tend to maintain the health and promote the vigorous flow of the sap within, but beyond those limits the manifestation of energy in one direction lessens the amount that is available for the other. The nerve force flowing out in streams of muscular energy is obtained at the expense of intellectual power and energy. The man who is compelled to employ his intellect all day feels no inclination for any great muscular exertion because he lacks the power to accomplish it; and the man who has taken part in athletic games would probably fall asleep if he attempted to read or think hard. To get the best result out of both needs the exercise of skill in their mutual adjustment with periods of rest judiciously intercalated between them.

IN discussing last week the Fatal Accidents Inquiry Bill, we dealt with the general question of publicity *versus* secrecy in investigations into sudden or suspicious deaths. We propose now to consider the system of medico-legal post-mortem examinations as carried out in Scotland; but on the threshold a difficulty confronts us owing to the remarkable and entirely unnecessary secrecy that prevails in regard to the whole system. We wrote to the Crown Office in Edinburgh asking for a copy of the suggestions for the medico-legal examination of dead bodies issued under the authority of the Lord Advocate, but this civil and moderate request was refused on the plea that "it is a private document for the use only of those employed under his lordship's directions in Crown cases in Scotland." That there should be any secrecy in regard to such a matter must strike everyone as absurd. From various sources, however, information has been obtained which we believe to be essentially correct, though in such circumstances it cannot be guaranteed as to every detail.

It appears then that in Scotland, as in England, it is not necessary that the procurator fiscal should require a post-mortem examination to be made in regard to every inquiry which he initiates. The view officially held is that post-mortem aid is to be called in only where the circumstances are so doubtful as to suggest the possibility of crime, but that it is not the function of the Crown authorities to ascertain the cause of every uncertified death. Frankly, we think that under present

circumstances this is by no means an indefensible position to take up. The Government, as representing the nation at large, is not yet so impressed with the scientific importance of ascertaining the exact causes of all uncertified deaths as to justify it in incurring the necessary outlay. But when we come to inquire how the principle is carried out in practice grave cause for dissatisfaction is to be found. The fee for a post-mortem examination and the report thereon is now £2 2s., whilst the fee for a medical report as to the cause of death without a post-mortem examination is £1 1s., and it appears that sometimes a report is asked for and expected to be given on a mere external examination of a dead body, with perhaps a little questioning of the police or of the relatives of the deceased. This is a system against which emphatic protest must be entered. So long as the Crown Office is willing to accept such reports procurators fiscal are perhaps justified in asking for them from medical men, and probably in following this course they sometimes escape reprimand from headquarters for undue extravagance. The defence is that such a report, when it is sent in together with the precognitions of police officers and relatives or neighbours, "completes the case." This, however, is a mere legal fiction. It is impossible to obtain any satisfactory medical evidence of the cause of death by such a method. Accepting the principle on which the Crown Office is understood to act, then, in regard to any individual case, there is either some suspicion of possible crime or there is not. If there be a suspicion of crime a post-mortem examination of the dead body should be made, and if there be no suspicion of crime no medical report is required. There is a legitimate place for the post-mortem examination, there may be a legitimate place also for the investigation by the procurator fiscal without any post-mortem examination, but there is no place whatever for a medical report made as the result of looking at a dead body for a minute or two and asking one or two questions of a policeman. Doubtless in such circumstances the medical man may often guess at the cause of death, or at least may guess that it was probably from "natural causes"; but the Crown does not, or should not, want mere guessing on the subject, either medical or legal—it should require facts, not speculations. The reason for asking for and accepting such reports seems to be simply that a guinea is thereby thought to be saved; but as a matter of fact a guinea is not saved, but wasted. And the whole system indicates that there are probably many cases in which the procurators-fiscal feel that a post-mortem examination is required, but in which, owing to pressure from headquarters, they are afraid to adopt this course and end in making a compromise which is worth nothing to anybody. As we shall see, this suspicion is strengthened by the fact that in recent years, for reasons of economy, the number of post-mortem examinations annually made has enormously decreased.

Coming now to the cases where necropsies are actually carried out, grave cause is again to be found for dissatisfaction. In the instructions to which we have above referred, but to which access has been refused, we believe that *inter alia* it is stated that in the district or county of any procurator fiscal the necropsy should be made by a man of experience and reputation residing in a large or central town of the district. The object here is manifest and is entirely praiseworthy. It is that the Crown should engage a man known to be of good standing in his profession, and by putting into that man's hands all post-mortem examinations in the district should give him the benefit of all such practice that the locality affords. In this way his opinion would be of increased value not only to the advocate depute in making up his mind as to the circumstances of any case, but also, and more particularly, in the witness-box, where issues of life and death may be at stake. In some places (though not in very many so far as we can learn) the sheriffs have faithfully acted up to the spirit of this instruction, and have made a specific medical appointment for the whole district of the procurator fiscal. It is not quite clear that sheriffs have done this under any special power given them *ad hoc*, and perhaps where no appointment has been made by a sheriff it may be because he has thought that the matter lay rather with the procurator fiscal. In many places, however, no such appointment has been made either by the sheriff or by the procurator fiscal, and the mere fact that a man has a medical diploma is accepted by the Crown as qualifying him for pronouncing an expert opinion in regard to the most serious and obscure pathological conditions. Even where the sheriff has made an appointment it turns out in some cases that, under central pressure or otherwise, the appointment has become more or less a dead letter. The Crown Office, indeed, seems, in the sense of the instructions, to accept a village as a large town, so that instead of the work being in the hands of one skilled physician it is so distributed amongst all the practitioners in the district that not one of them in the course of a lifetime can hope to have sufficient medico-legal experience to enable him to maintain the knowledge of pathological appearances which he acquired when he was a student of medicine; and the handsome gain which the Crown Office reaps from this policy is the saving of the railway fares which the medical man in the central town would charge in addition to the fee for the post-mortem examination. Further, within the last few years the procurators fiscal have received stringent orders not to multiply post-mortem examinations. It is quite possible that at one time there was undue laxity and that a necropsy was sometimes unnecessarily ordered by the procurator fiscal, but the reaction has been extreme, and the result is that now, more than ever, there is need that all the post-mortem examinations of a district should be in the hands of the same man, so that he should have every opportunity of keeping himself well up in his work and should be called on only when obviously grave and important issues are at stake.

It is sometimes alleged that under the present system local medical men, knowing that if a necropsy is ordered they are likely to be employed, will give early information, which they would withhold if they knew that they would be excluded from the necropsy and its fee. This contention brings us to another important question—namely, is it ever right to entrust to the hands of a single medical man a port-mortem examination on which, perhaps, the life of a human being may depend? Again, with the Treasury (which is behind the Crown Office), this is largely a question of expenditure; but surely in a matter so vital expense should be a very secondary consideration. The practice seems to vary considerably in different parts of Scotland. In one locality the same two medical men are regularly employed in all cases, and any local practitioner who has had to do with the case is practi-

cally shut out. In another one medical man is regularly employed, but the local practitioner is sometimes conjoined with him; and the necropsy is often made by a single individual only, who may either admit the local practitioner as a spectator or may object to his presence altogether, or who may himself be the local practitioner. The shifts to which a procurator fiscal may be reduced by his desire for economy combined with efficiency are sometimes justifiable. We have heard of a medical man being requested to commence the post-mortem examination himself, but if he found appearances indicative of crime he was to stop operations until he had sent for the local practitioner as a second witness, or else to ask the local man to attend in the first place merely as a spectator, but with the possibility of signing the official report if the case should turn out to be a serious one. Next week we propose to discuss the remedy for the remarkable system, or want of system, which has been described above.

Annotations.

"Ne quid nimis."

THE ASSOCIATION OF FELLOWS OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

A MEETING of the Committee of the Association of Fellows of the Royal College of Surgeons of England was held on June 7th, and was very well attended. The minutes of the last meeting were read and confirmed. The main object of the meeting was to discuss the expediency, as there were four vacancies, of having additional candidates to represent the Association at the ensuing election in July next. The names of several eligible candidates were mentioned, and amongst them were those of Mr. A. T. Norton and Mr. C. B. Keetley. After some discussion it was unanimously resolved to invite Mr. Norton to allow himself to be put in nomination, and Mr. Norton, who was present, expressed his willingness to comply with the request of the Committee. Mr. Keetley, who was also present, said that he should prefer to stand on one side this year and to have a longer time for consideration, and thereupon the Committee expressed a hope that he would agree to be a candidate next year. A discussion arose in reference to the advisability of drafting a letter to be sent to all the Fellows of the College for the purpose of calling attention to the past work of the Association, to remind the Fellows of the several concessions which, by the action of the Association, the Council of the College had been induced to extend to them, to point out what further advantages they might hope to secure by concerted action and to urge them to support at the election candidates who were favourable to the elevation of their status. The discussion resulted in the appointment of a subcommittee for the purpose. This concluded the business of the meeting and the Committee adjourned. The subcommittee referred to met on the following evening (June 8th) and a letter was drafted which was unanimously accepted and passed. The hon. secretary was directed to have the letter printed and issued to the Fellows at the earliest possible date after its submission to the members of the subcommittee for correction, if need be, and approval The annual meeting of the Association will be held on the 22nd inst., but in consequence of the Fellows' dinner in connexion with the celebration of the jubilee of the Fellowship the annual dinner of the Association will not take place this year.

THE OFFICE OF SUPERINTENDENT OF STATISTICS.

No fresh information has as yet been made public as to the succession to Dr. Ogle's office in the department of the Registrar-General. The appointment is one of the greatest importance to the medical profession and, above all, to that department of the profession which is concerned with the administration of the public health. But, curiously enough, nomination to the office of Superintendent of Statistics is in the hands not of the President of the Local Government Board but of those of the First Lord of the Treasury, and this notwithstanding the fact that under the Local Government Board Act, 1871, the powers and duties hitherto devolving on the Secretary of State as to registration of births, deaths &c. were transferred to the Local Government Board. It is generally believed that Dr. Ogle intends to retire in September next; fortunately, the selection of a successor will not have to be made without a list of able and well-known candidates, such as Dr. Newsholme, Dr. Tatham and Dr. Whitelegge, to whose antecedents and claims we have already referred.

SORE-THROAT IN RELATION TO WOOD PAVING.

AT the present day, when almost every educated person understands a little physiology and some practice more or less of empirical physic, and when that which may be only whispered in the professional ear is liable to proclamation at any time in the daily press, it were singular indeed if so notable a fact as the prevalence of a general disorder were to pass unchallenged. We have lately had amongst us a disease of this kind—a form of tonsillitis attended in some cases with suppuration, in others with the marks of true diphtheria. Speculation has been busy as to its cause and has found it, according to some critics, in the wood-pavement in common use upon our streets, which has been condemned without reserve as being insanitary. It is argued that this, as an absorbent and perishable substance, harbours the noxious ingredients of decaying manure, which, dried and blown about with its own worn and rotting particles, become the means of septic irritation. The suggestion is not without some colouring of possibility, though its significance has probably been much overrated. Its practical value, moreover, is impaired by the fact that stone, asphalte and concrete paving alike are liable to the same objection. For the first of these it may, indeed, be urged that its interstices act as so many earth filters, which, however imperfectly, dispose of many germs, whilst the two latter, being non-absorbent, must discharge much of their refuse into the roadside gullies. Notwithstanding these arguments, however, there can be no question that they each and all receive and distribute into the atmosphere much decayed organic matter. Too much, again, has been made of the porosity of wood-blocks. This, as also the degree and rapidity of their wear, is so trifling that practically there can be little to choose between their contagion-breeding properties and those of the other materials above-named. The accusation against wood-paving, indeed, is so far no more than an improved suggestion. Even as such it is doubtless worthy of some attention; but we have still to learn whether ulcerated throats have been more prevalent amongst those who live near and who daily traverse this kind of pavement than amongst those who do not. Some progress would have been made in the direction of settling this question of the responsibility for sore-throat which now attaches to the reputation of wood-pavement if it were shown to what extent street-cleansers are liable to it. As regards the importance of maintaining cleanliness on the roadway there can in any case be no question. We would therefore by no means await the proofs of inquiry before employing in every street the water-cart laden, as is usual in some districts already, with a cheap and suitable antiseptic solution. Recent

weather conditions, including wind, heat, and drought, with occasional showers, have been favourable to noxious emanations generally, whether from house drains, or road gullies, or garden or stable refuse and many like sources. Either of these might, with ample probability, be condemned as the starting point of septic infection. They constitute more evident foci of disease than any well-tended pavement, and we are therefore still unprepared to join those who would without further proof or examination destroy as unwholesome that which has given us the great advantage of a smooth and comparatively noiseless roadway.

ELECTRICITY ARISING FROM GAS- AND WATER-PIPES.

A WRITER in *Électricité* has made the interesting observation that there is a difference of potential between the water and gas pipes in all houses and that if one terminal of a telephone is joined to the water-pipe a crackling sound is heard in the telephone on lightly touching the gas-pipe, which of course indicates the passage of a current. By substituting a galvanometer for the telephone it is found that the negative pole is formed by the gas-pipe, the galvanometer deflection being permanent and constant in amount during several months, though there is a slight diurnal variation. These experiments have led to the suggestion that the pipes must be fairly well insulated from one another and might really act as conductors for telephonic communication. As a matter of fact it is stated that conversation was successfully carried on without any other conductor between two houses at a distance of 100 metres apart, the microphone used in the experiment being joined to three bichromate cells. The small though distinct currents that are set up when the gas- and water-pipes are connected are attributed to a slow chemical change in the pipes, which may thus represent the plates of a battery. This hypothesis leads one to think of the probable nature of these changes and to wonder whether any effect is produced in the water contained in the water-pipes, or whether perchance minute traces of metal as a result of the change would find their way in solution into the water. If the latter event took place another and hitherto unsuspected source of lead poisoning might possibly be traced.

PHYSICAL EXERCISES AND FENCING.

WE have received a copy of a lecture delivered at the Royal United Service Institution by Captain A. Hutton, late King's Dragoon Guards, in which that officer advocates the teaching of fencing to boys in the army classes at our large schools. The question, however, of the advisability of teaching fencing to young people brought about a brisk discussion, in which the proposal, notwithstanding that it was supported by many of the speakers, was strongly opposed by others on various grounds and especially because it was alleged to cause an unbearable mental and nervous strain, and further, that in the case of growing youths it frequently produces lateral curvature of the spine and other deformities. All, or practically all, the large schools have nowadays what are termed army classes, which are devoted to preparing boys for army competitive examinations and a military career. Captain Hutton is desirous of encouraging boys to learn the art of fencing and urges—correctly, no doubt—that a boy of fifteen, provided the instruction be sound and the teacher intelligent, will learn to fence in about one-third of the time that is required to teach a grown-up man, although the latter may be only in the twenties. He would consequently have fencing partly replace the open-air games of football and cricket which boys are now exclusively compelled to take part in. It is sometimes alleged that the physical training of youths intended for the army is neglected because all their energy is required for the mental strain necessary to prepare them for examination; and we are afraid that there is a good deal of truth in this allegation. With regard to fencing as compared with other physical exercises, we are of opinion on hygienic grounds that fencing should not be allowed to interfere with such out-door games as cricket and football, mainly because they are out-door and because they bring into exercise all parts of the body. As regards the assertion that fencing taxes the brain and nervous system more than any other form of exercise, to such an extent indeed that it becomes an almost unbearable mental and nervous strain, we should say that there is probably a certain amount of truth in this. Much will depend upon temperament. A boy of nervous temperament who is eager and ambitious to excel in all he attempts would probably feel the nervous strain of fencing, especially if his brain had been already exercised and possibly fatigued by his studies. Still, for the education and coördination of the eye, hand and muscular sense and the development of activity and prompt muscular action there is probably no better exercise than that of fencing. From an anatomical and physiological standpoint, however, regular systematised exercises which produce a symmetrical development of the body are undoubtedly those best adapted for that period of life when it is actively growing and developing, but we do not believe that lateral curvature of the spine and other deformities would be induced in those who had not already a tendency to them, especially if the fencing exercises were limited to three hours a week.

THE PHARMACEUTICAL PROFESSION IN ITALY.

THE Italian Legislature has recently been occupied with a rather serious defect in the pharmaceutical service of the remoter communes, more than 3000 of which are without the immediate supply of medicines when wanted. This defect is a grave disadvantage, not only for the population, but also for the travelling public which, in yearly augmenting numbers, penetrates into every corner of the peninsula. Attempts have been made to meet this unsatisfactory state of things. The experiment was tried of furnishing fully equipped pharmaceutical stores to the parish doctor, who was expected not only to prescribe but to compound and dispense his own prescriptions; the experiment however, did not succeed, the parish doctor, besides his unfamiliarity with the pharmacist's business, being often too deeply absorbed in professional work to make up, much less to consign to their destination, the medicines required. He had neither the training nor the time for the twofold *métier* exacted from him, whilst his stock became exhausted. The matter being urgent, the Minister of the Interior took it in hand, and, in reply to an interpellation in the Chamber of Deputies, has just announced the new departure he has taken. Premising that the want of pharmacies in the remoter communes was due to their unremunerative character—adequate living and thriving being all but impossible to the thoroughly qualified pharmacist, who had incurred great expense in obtaining his diploma and in setting up in business in these sparsely populated regions—his Excellency stated that he had entrusted the solution of the problem to a competent commission as well as to the Superior Council of Public Instruction. By these authorities the solution proposed and adopted was to facilitate the taking of diplomas by that lower grade of the pharmaceutical profession which was not averse to setting up in business in the communes referred to. By this is meant, not the transformation of druggists' assistants into pharmacists proper, but the institution of a secondary class of pharmacists under the title of "esercenti farmacisti" (working pharmacists), who, without pretending to the culture of the primary class, should yet have furnished guarantees of ability to work a laboratory and to dispense prescriptions. The diploma *ad hoc* would be conferred after a regular course of practical pharmacy, admission to

such course being, in the first instance, open to none who had not the certificate of qualification at the "technical school" or who had not the equivalent diploma of the "normal school." The course of practical pharmacy to be afterwards entered upon would be given in the "Istituti Tecnici," of which every Italian province has one or more. No innovation is sought under this ordinance which would prejudice the status of the pharmacists of the primary class or of the Doctors in Pharmacy and Chemistry. These will, as heretofore, be at liberty to practise wherever they like. The creation of pharmacists of the secondary class is intended only for the service of the remoter communes (all of which are specified by statute), which would otherwise remain without pharmaceutical resources of any kind. These secondary pharmacists, moreover, may, if they choose, act as assistants to pharmacists of the primary grade; but they cannot be "directors" of pharmacies or of pharmaceutical laboratories.

POISONING BY AMYL NITRITE.

A VERY interesting case is recorded by Dr. Shoemaker in the *Medical News* of Philadelphia of May 20th, 1893, of a patient who by mistake took a teaspoonful of undiluted amyl nitrite. Such a case is exceedingly rare and is worthy of note. Three minutes after the drug had been taken Dr. Shoemaker found the man sitting in a chair with a moderately flushed face, a pulse of 112, and complaining only of a little headache. He was successively given several glasses of warm water, a hypodermic injection of one-eighth of a grain of apomorphine, mustard and warm water, zinc sulphate in warm water, another eighth of a grain of apomorphine, and more mustard and warm water—so that just seven minutes after he took the drug copious vomiting of a large unmasticated meal occurred. The evacuated matter emitted a strong odour of amyl nitrite. Digitalis and brandy were then injected beneath the skin and the patient was put to bed and surrounded by hot bottles. His face was moderately blue and the extremities were cold; the respiration was shallow but regular; and the pulse was weak and intermittent, but only 68 to the minute. Sulphate of strychnine in doses of $\frac{1}{30}$ gr. was frequently repeated. Two hours later the pulse had ceased to intermit and the patient rapidly recovered. Consciousness was not lost at any time, though the man seemed drowsy and stupid. There were no twitchings or convulsions or irregularity of respiration. The man was constantly watched and every symptom carefully noted as to time, a record of the pulse being taken every five minutes, but no symptoms beyond those related developed.

THE DIFFUSION OF SMALL-POX.

SPEAKING generally, the diminution in the extent of small-pox to which we referred last week is maintained in the country, and it is especially notable in London. Some four or five weeks ago the number of cases under isolation by the Metropolitan Asylums Board was about 570; it has now fallen by 100, and on the 12th inst. the actual number in hospital was 473. Last week fresh attacks occurred in a number of places, such as Aston Manor, 4; Birmingham, 16; Bootle, 3; Burnley, 6; Chadderton, 3; Coventry, 4; Halifax, 14; Hull, 8; Keighley, 3; Manchester 15; Middlesbrough, 4; Nottingham, 2; Oldham, 5; Rawtenstall, 2; Reading, 2; St. George's, Bristol, 4; South Shields, 2; Wakefield, 3; West Ham, 10; and Wigan, 2. In Leicester the fresh attacks during each of the four weeks ended Saturday, June 10th, were fourteen, five, fifteen and seven respectively; and a further attack of the disease has taken place amongst the unprotected hospital staff. The matter as to which there has been dispute now stands thus: Of twenty-eight officials at the hospital, twenty-two were protected by revaccination or a previous attack of small-pox, and none of these twenty-two have contracted the disease; six were not so protected and refused revaccination. Four of these latter had contracted small-pox and one had died; now a fifth has contracted the disease. At Bradford there are still over 100 cases of small-pox in hospital. At Halifax the local complaints as to the influence of the small-pox hospital in diffusing the disease aerially have been so strong that the authorities have undertaken to procure another site. At Leeds the diminution in the amount of the disease is maintained and the number of cases under isolation had fallen to 107 at the end of last week. Cases of the disease are reported from a number of other places, such as Brighouse, Brierley Hill, Dewsbury, Dunton-Bassett, Eccleshill, Elland, Holbeck, Leigh, Morley, Nuneaton, Oldbury, Stainland, Stockton, Waterloo-with-Seaforth and Windhill. In some cases the occurrences amount to outbreaks, in others they are isolated attacks.

A MIDWIFERY FEE ENFORCED WHERE THE PLAINTIFF WAS NOT CALLED IN.

WE are often asked whether a midwifery fee can be enforced where the patient fails to send for, after engaging, a practitioner. We insert the following case in point from the *Western Daily Press* of June 10th:—

"A MIDWIFERY FEE.

"TIPPLE *v.* BURRAGE.—This was an action by Dr. E. Tipple of Gorleston against defendant, who lives at Bradwell, to recover £1 1s., midwifery fee. Mr. R. F. E. Ferrier appeared for plaintiff. The facts were that defendant and his wife waited upon plaintiff and engaged him to attend upon Mrs. Burrage in her confinement. This event occurred, according to Mrs. Burrage, earlier than she expected and plaintiff was not called in. Defendant denied that he engaged plaintiff, but his Honour said that a contract was made and defendant must pay. He gave judgment for plaintiff at the rate of 5s. per month."

SCOTTISH MEDICINE IN THE DAYS OF QUEEN MARY.

PROFESSOR GRAINGER STEWART of Edinburgh has published an article on the above topic in *Blackwood's Magazine* for this month. It appears to have been a presidential address delivered before the Harveian Society of the northern capital. The apposition of the ideas involved in mentioning the beautiful and unfortunate Queen of Scotland and those connected with the decay and disorder of the human frame appears at first sight inharmonious, but when we reflect that

> "The pomp of heraldry, the pride of power,
> And all that wealth, that beauty ever gave,
> Await alike the inevitable hour,
> The paths of glory lead but to the grave,"

our injured sense of the æsthetic recovers itself and we peruse with *sangfroid* an account of ailments affecting a person whom from our infancy we have imagined as surrounded by every element of romance. Every reader must have a great sympathy for the brilliant and beautiful heiress of the Stuarts returning widowed from the garden-land and brilliant court of France to the Scottish mists and acrimonious wranglings of hardheaded people in the throes of a constitutional and ecclesiastical revolution. The throne of Scotland "cam' wi' a lass" to the Stuarts, and it was prophesied would "gang wi' a lass," and that "lass" would have required stronger nerves than Mary Stuart appears to have possessed had she been able to thrive amongst the rough baronage of the period. She appears, moreover, to have brought with her from France the seeds of an ague, which later gave rise to a "hardness in her side" suggestive of splenic enlargement. Her return to Scotland was no doubt followed by her making many "new acquaintances," but the first so-called "new acquaintance" seems to have been a disease indistinguishable from influenza, which appears to have been epidemic at the time. The unsatisfactory alliance with Darnley and her subsequent regard

for Bothwell appear to have so unsettled her nervous system as to have produced the phenomena of *grande hystérie* to such an extent as to render her early demise probable. Inherited gouty tendencies showed themselves later and the Queen underwent beneficial treatment at Buxton; but, as we know, the axe of the headsman interrupted the progress of pathological changes in the royal patient. In the exhaustive account which Professor Grainger Stewart gives of the illness of John Hamilton, Archbishop of St. Andrews, there is interesting incidental mention made of Jerome Cardan, the Milanese physician, whose pathological ideas may have been crude, but whose therapeutics appear to have been eminently sensible. The Archbishop, it appears, overworked by ambition and by over-eating and drinking, developed an annoying asthma, and through the intermediary of Dr. William Cassanate consulted Jerome Cardan, whose progress from Italy to Scotland seems to have been that of an Æsculapian demi-god. Arrived, he prescribed, together with demulcents and carminatives, the incinerated "lungs of a fox"—a "pulmonin" which we must, perhaps, refrain from deriding in the present day. His successful treatment of his patient seems, however, to have depended upon his regulation of the habits of the former as regards food, rest and exercise. In order that regularity should be observed in these matters, his Grace was recommended to procure a clock and to live by it. It is unfortunate for some reasons—not for many—that his Grace's prospects of longevity were interrupted by the richly deserved gibbet. As regards disease in general, humanity, built on much the same plan then as now, seems to have suffered much as we do; the exceptional scourge being the plague or pest, in which term fevers other than the oriental plague seem to have been included, and in the endeavour to prevent which some elementary notions of hygiene and isolation seem to have been known to the municipal authorities of the period. For a fuller consideration of the medicine of the period and some account of its medical worthies we must refer our readers to Professor Grainger Stewart's interesting sketch.

THE DROUGHT AND ITS RESULTS.

THE long continued drought, besides having a serious effect on agriculture and especially on the hay-crop, is now beginning to tell upon domestic water-supplies and very great anxiety is felt in a number of towns and villages as to the prospects in view. In the west of England there are localities where no noteworthy amount of rain has fallen for over ninety days, and at Plymouth there is only one day's supply in the reservoir, the amount flowing in is constantly diminishing, and the town water has in consequence to be turned off for many hours in the day. In Lincolnshire and in other parts a water famine in the rural districts is threatened and much the same difficulty is being experienced in many other portions of the country. Such a condition is always serious, because it leads people to resort to sources of supply that have been abandoned on account of their pollution. Old wells, closed because they were liable to soakage of filth, are re-opened, and brooks and rivers are resorted to although they receive sewage higher up. In this way drought tends to the production of definite disease, such as typhoid fever. Then, again, in those urban communities where infantile diarrhœa becomes epidemic as the hot weather advances experience has shown that the incidence of the disease is greatest during periods when there is an absence or scarcity of rainfall. So far as cholera is concerned it is doubtful how far mere scarcity of water conduces to the disease. In so far as the contagion lies in the soil, actual drought and a really dry condition of soil are probably not favourable to the development of the specific organism; but indirectly absence of rainfall may, according to the special local conditions, lead to the spread of the disease. This is notably the case where polluted river water is resorted to and where diminution in the bulk of the contents of a river means concentration of filth. So also, as at Hamburg last year, filthy tidal water may rise higher up rivers when there is a diminished downflow from above, and in this way water intakes heretofore free from tidal influence become subject to it. Lastly, drought means general diminution of cleanliness of sewers, drains and of surface by reason of the lack of sufficient water, and want of cleanliness goes largely hand in hand with disease.

THE CORONER FOR OXFORD AND THE RADCLIFFE INFIRMARY.

FOR some time past Mr. Hussey, the coroner for the city of Oxford, has adopted the somewhat unusual course of ordering the removal of the bodies of those who have died in the Radcliffe Infirmary under circumstances requiring an inquest to the city mortuary, where they are viewed by the jury. This proceeding the committee of the infirmary very naturally resent, it being an unusual one. They obtained counsel's opinion as to its legality and an opinion was given by the counsel to whom it was submitted that the coroner in giving such orders acted illegally. It was shown by reference to the Coroners Act of 1887 and to previous Acts regulating the duties of a coroner that he and the jury shall view the body at the place where death took place, except it be necessary to remove the body elsewhere for the purpose of a post-mortem examination being made. This opinion, with full details of cases in which bodies had been removed from the infirmary to the city mortuary within the last few months by the coroner's order, were forwarded by the committee to the Lord Chancellor with a request that he would intervene to prevent a course which they believed to be illegal. Referring to this petition the coroner says that no injury to the body is suggested and that there have been no complaints by the friends of the deceased. He also observes that the removal of a body from one place to another has been the practice from time immemorial, that the power now in question was discussed in 1891 in a case at Canterbury and that the Lord Chancellor expressed no disapprobation of the practice of removal then. He asks whether the body is to remain at the spot where it falls at death, and, if so, how if it were at the bottom of a river? In such a case he points out that most of the mortuaries created by modern statutes would be useless, and it would be illegal to use them for most of the purposes for which they have been provided throughout the country at the public expense. In replying to the committee through his secretary, the Lord Chancellor stated that he had communicated with the coroner on the subject of the petition and had informed him that, whilst not thinking it desirable for him to express an extra-judicial opinion on the subject of the coroner's jurisdiction in relation to the removal of a body, he regards it as of the highest importance that in assuming such a power the coroner should be guided by the consideration whether grave public inconvenience would follow from any other course. Mr. Hussey is a medical coroner, and nothing would have been more agreeable to us than to support him heartily in this dispute with the committee of the Radcliffe Infirmary. But truth compels us to state frankly that the removal of a body exposed in a public place or taken from the bottom of a river to a mortuary is a totally different thing to the removal of a body from the mortuary of the infirmary to the mortuary of the city, and to compare the two is simply begging the question. To put it plainly and simply, Why did Mr. Hussey give such orders? It is no answer to beg the question by putting cases which are not parallel or to plead that the body is not injured or that the friends of the deceased are not aggrieved. These are all quite

beside the question and wide of the mark. So far as we are aware the Radcliffe Infirmary of Oxford is the only hospital in the kingdom where bodies of deceased patients the property of the coroner are not viewed by him and the jury in the mortuary belonging to the hospital; and Mr. Hussey is the only coroner, medical or legal, who has adopted this practice of ordering their removal to a different mortuary. In other words, Mr. Hussey's conduct is singular and without precedent and for these reasons requires ample grounds for its justification. In his reply to the petition he implies that the mortuary of the infirmary is unsuitable for its purpose, and he also makes an implication against the officials as to the treatment of the bodies, but he gives no facts in support of this latter. Assuming both, however, to be true, the coroner had his remedy—viz., to point out the defects of the mortuary and any misconduct of the officials to the chairman and members of the managing committee, a body of gentlemen who would, we feel sure, have paid every reasonable attention to him and would also have promptly removed any abuses so far as lay in their power. Mr. Hussey also complains that the committee have not aided him in the discharge of his duties as coroner, but on one occasion his conduct towards the resident medical officer of the infirmary was, to say the least, inconsiderate. In some cases we have had to regret that Mr. Hussey has not shown a little more of the *suaviter in modo* and a little less of the *fortiter in re*. The Lord Chancellor, in his reply, has conveyed a hint which he will do well to take, since there can be no doubt that whilst no inconvenience would be the result of his acting like other coroners—viz., viewing the body in the mortuary of the infirmary and holding the inquest in or near it—very great inconvenience must attend what appears to be his present usual practice. Everyone knows the powers which a coroner possesses. We trust that in future Mr. Hussey will realise the truth of the old saying, "As you are strong, be merciful."

A SCHOOLMASTER'S WATER-SUPPLY.

A CORRESPONDENT has sent us for examination a small bottle of water taken direct from a tank from which a Sussex schoolmaster and his family are said to obtain their drinking-water, with the request that we would give an opinion upon the character of it. The repulsive appearance of the water is sufficient ground for condemning it unhesitatingly. It swarms (we counted just 100 in four fluid ounces of the water) with dead animalculæ of the kind which infest rotten wood and damp and mouldy corners of a long neglected tenement. The animalcule measured just one-eighth of an inch in length, was perfectly white and resembled a small caterpillar. Probably water is not their habitat; they were drowned and were therefore presumably derived from the dirty surroundings of the tank. Besides these objectionable animal forms there were also present a large specimen (dead) of amphipoda probably gammarus pulex, and a white thread-like transparent insect over half an inch long, also dead. The water had a repulsive musty smell. It was impossible to carry out anything like a satisfactory analysis of it, for the quantity did not exceed four and a half fluid ounces. Suffice it to say, however, that large quantities of ammonia were present, judging from the intense colour that was produced with Nessler's reagent, whilst the existence of organic matter was indicated by the rapid reducing effect upon permanganate of potash and still further pollution was illustrated by a marked response to the test for phosphates. In view of these facts the water is utterly unfit for drinking purposes and a new source of supply should be sought at once. We agree with our correspondent that the above is a case quite as serious as, if not more so than, that which formed the subject of an article in our columns a few weeks ago in which the action of a School Board for wrongful dismissal of a teacher, whose only offence was that he had complained of the water supplied for drinking purposes, was discussed at some length. It is to be hoped that the schoolmaster in the present instance will not be deterred from complaining for fear of sharing a similar fate.

SMALL-POX IN SCOTLAND.

IN Montrose, where the disease was understood to be at an end, three new cases have occurred and the patients have been sent to hospital. Elsewhere the reports are more favourable. In Edinburgh there have been three new cases and in Glasgow only two cases occurred last week. In Paisley one case is recorded.

THE DRUGGIST AS MEDICAL PRACTITIONER.

THE *Western Mail* of the 7th inst. gives some account of an inquest on a poor woman of Trevaughan, Whitland, who died shortly after taking a mixture supplied by a druggist on the prescription of another druggist. Druggists are progressing; they used only to dispense their own prescriptions. There is in this case a druggist who prescribes—Mr. Jabez Jenkins—and the prescription was taken to be dispensed by another druggist—Mr. Owen. Mr. Williams of Carmarthen made a post-mortem examination and found that death was due not to the medicine but to heart failure. That does not alter the facts that the druggist had no business to prescribe and that had the patient been seen by a properly qualified medical man the heart might not have failed.

CHOLERA PRECAUTIONS AND IMPERIAL SUBVENTIONS.

IT is evident that we have not yet heard the last of the demand made by port sanitary authorities for a subvention from Imperial funds to aid in the expenses which are being incurred in some ports in anticipation of the re-introduction of cholera from the Continent of Europe. Mr. Heneage and his friends decline to accept the decision of the Chancellor of the Exchequer and signatures are being obtained from Members of Parliament with a view to a more formal application on the same subject. If the applicants wish to gain their end they should limit the terms of their demand to such effective special measures as they think are imposed on them in view of cholera and not make it appear as if they wanted a subvention for merely carrying out with a little extra care their ordinary duties as port sanitary authorities.

WELLINGTON COLLEGE.

The Times of June 14th announces that the report of the governors of Wellington College for the year 1892 has just been issued as a Parliamentary paper in accordance with the annual custom. There has been an exceptional and extraordinary expenditure, most of which was incurred in connexion with the recent sanitary works carried out at the College and the consequent temporary removal of the school to Malvern, creating a large deficiency at the end of the year of £25,571 17*s.* 4*d.* Our readers will remember that the College has been visited not only by the grave outbreak of illness amongst the pupils which led to the removal of the school to Malvern, but by serious illness on several previous occasions. Public confidence was shaken in the management of the institution notwithstanding that it had the patronage and support of a more distinguished body of governors than any other school in the kingdom. The annual speech day will take place to-day (Saturday), instead of on the 18th, the anniversary of the Battle of Waterloo, which this year falls on a Sunday. Parents and friends of the boys and others interested in the institution will, no doubt, assemble in large numbers on this occasion, which will afford them an opportunity of inspecting the various sanitary improvements carried out under the direction of Mr. Rogers Field, the well-known sanitary engineer. They will be able to observe the numerous

open dykes constructed for the express purpose of carrying away the superabundant surface water. These leave no doubt that the governors have at last taken into account the low-lying and damp nature of considerable portions of the soil in the neighbourhood of Wellington College, which, it has always been contended in these columns, had more to do with the recurrent illness amongst the boys than the actual sewerage defects.

THE JOHN HUNTER CENTENARY.

WE have already announced that there will be an exhibition of Hunterian relics at the conversazione of the Royal College of Surgeons next month. The Hunterian Society has also decided to hold a conversazione in October, as nearly as may be on the 100th anniversary of John Hunter's death (Oct. 16th). The matter has been taken up with much energy by the President for this year, Mr. F. Gordon Brown; a guarantee fund has been already raised sufficient to cover the expenses and there is every prospect of a large and interesting gathering. It is hoped to bring together on this occasion not merely some illustrations of the lives of the two Hunters and their connexions, but also of contemporary medical and surgical science.

THE INTERNATIONAL MEDICAL CONGRESS.

FROM Rome our own correspondent writes under date June 12th: "All arrangements are now complete for the solemn opening of the Congress by his Majesty King Humbert on Sept. 24th. The programme and the order of proceedings *de die in diem* are also prepared, whilst the furnishing and decoration of the *locales* in which the 'Congressists' will assemble are already begun. The Organising Committee (Professor Guido Baccelli in the chair) proceeded last week to ballot for the President of Section 2 (that of Physiology). The result was foreseen in the election of Dr. Angelo Mosso, ordinary professor of physiology in the University of Turin—an appointment which gives universal satisfaction. Dr. Baccelli has decided on entrusting to the local Italian committees a share in the organisation of the scientific work. With this object he has arranged that members of the Congress may not only place themselves in communication with the presidents of the nineteen several sections but also with the presidents of the respective local committees on all matters connected with the strictly scientific part of the programme. The presidents, local as well as sectional, will keep themselves constantly *en rapport* with the Secreteria Generale (Dr. Maragliano and his staff), to whom they will submit from time to time, as occasion arises, whatever bears directly on the subject-matter of the Congress and the order in which it is to be taken."

CARBONATE OF GUAIACOL.

THE value of guaiacol in the treatment of tuberculosis is now fully recognised. The drug, however, has many disadvantages, both as regards taste and smell, and more especially as to the disturbances of digestion which it is likely to cause. Carbonate of guaiacol has therefore been recommended as in a great measure free from these disadvantages. Carbonate of guaiacol is a fine crystalline powder, free from odour, tasteless and insoluble in water but slightly soluble in alcohol, ether, chloroform and benzol. Therapeutically it possesses all the properties of guaiacol, but, as already said, none of its disadvantages. MM. Seifert and Koelescher,[1] who have prescribed the drug to sixty patients suffering from various forms of tubercle, speak highly in its favour and prefer it to creasote for the following reasons. Carbonate of guaiacol is not so irritating to the mucous membrane of the digestive tract; the gastric juice of healthy people has no effect upon it, and it is therefore not decomposed until it enters the intestine, when carbonic acid gas and guaiacol are set free. The stomachs of tuberculous subjects, however, according to MM. Seifert and Koelescher, contain large numbers of saprophytic organisms and the drug is decomposed more rapidly, the free guaiacol preventing the further development of bacteria and so improving the digestive power of the stomach. The free guaiacol is absorbed rapidly, appearing in the urine within half an hour to an hour after its administration. As the carbonate is only slowly decomposed a uniform distribution of guaiacol through out the intestinal juices can be obtained. Dogs and cats can take doses of 75 grammes without any dangerous symptoms. Patients can be given 6 grammes within twenty-four hours without discomfort, taken in divided doses. MM. Seifert and Koelescher likewise state that the blood of tuberculous patients contains pathological ingredients which cause hectic, night sweats &c. Guaiacol unites with these bodies and forms inoffensive compounds, with immediate relief of the symptoms.

[1] La Presse Médicale Belge, May 14th, 1893.

MEDICAL CLAIMS AND THE COUNTY COURT.

PERHAPS medical men do not sufficiently use the county court. The medical bill would be regarded a little more if its claims were more frequently asserted in public. The medical creditor, from the natural quietness of his life and calling, is apt to shun the legal measures which are the necessary stimulus of some debtors. At the Croydon County Court a few days ago, according to the *Surrey Mirror*, a medical bill claiming twenty-five guineas for attendance and medicine was established in the case of Travers-Smith *v.* Hannah, in which a surgeon practising at Penge sought to recover that sum from the defendant, the son and executor of the late Mrs. Hannah of Heltonsleigh, Thicket-road. The attendance on the deceased was from June, 1891. From Oct. 14th, 1892, to Jan. 15th, 1893, the plaintiff had made seventy-eight visits, eight of them at night time, and had performed seven operations on the granddaughter. Forty bottles of medicine had been supplied. Instead of sending in a bill of details a lump sum was charged. The defence was that the plaintiff's charges were excessive, unfair and unreasonable. No evidence in support of this theory was called. The plaintiff said he charged patients, according to their circumstances, from 2*s.* 6*d.* to 10*s.* 6*d.* a visit. Judgment for the plaintiff was given, with costs—and very properly so. There is no service more acceptable to elderly people suffering from the diseases or infirmities of age than that of the medical man, often given very conscientiously when the attention and patience of relatives is apt to fall off. There is every reason why such services should be requited.

THE PREVALENCE OF FEVER.

THE incidence of scarlet fever again shows a rise. In London and the large towns during the week ended June 3rd more than 1600 cases of this disease were notified, the metropolis contributing about three-eighths. The chief other contributories were Sheffield, Leicester and Liverpool. Cases of diphtheria throughout the country fell to 300; but London alone furnished three-fifths of the total number and the deaths there were 28 above the corrected weekly average. It appears, however, that fewer patients were admitted and that fewer are under treatment than before, in contrast to scarlet fever, cases of which are more numerous than ever in the London fever hospitals and are, in fact, being daily refused. Enteric fever continues to show a low incidence and fatality, and the metropolitan proportion of this disease does not reach more than one-fifth. London is not the only place that is suffering from a serious outbreak of scarlet fever. This disease is reported from Glyn Ceiriog in Wales and is said to be most virulent in nature. It is increasing at Skipton in Yorkshire and prevails at Whitley and other neighbouring

parts of Cheshire. The Cheshire Regiment, in which scarlet fever had appeared at Sheffield, is now camped out in the fields and the disease shows signs of decline. Measles has broken out at Aberavon near Cardiff, and already 70 children are suffering from the disease. We learn, too, that the steamship *Oregon*, from Liverpool to Canada, is detained in quarantine at Grosse Isle owing to a violent and fatal outbreak of diphtheria amongst the emigrants on board. Influenza, we regret to say, is prevalent amongst the gunnery and training ships at Devonport. Numerous cases have been sent to the Royal Naval Hospital at Plymouth, with the result that the wards of that establishment have soon become filled with patients and orders have been given to treat the cases on board ship.

PROHIBITION AND DRUNKENNESS.

OUR attention has been directed to a Bill now before Parliament which aims by a somewhat singular method at the prevention of drunkenness. It provides that any person convicted of this offence twice within twelve months shall not be allowed to enter, or to purchase intoxicating liquor upon, licensed premises. A licensed vendor who sets aside the restriction imposed in such a case shall on his part likewise be liable to a penalty. The Act in question is not to apply to centres of population with more than 20,000 inhabitants. We hardly know whether to treat this as a serious effort of legislation or not. If the phrase be compatible with the rules of language we might say that the proposed Act, short as it is, bristles with points of weakness. Who, for example, outside his own family circle, is likely to take such interest in any individual as to note his occasional excesses during a whole year? Who, granted that he does take some such interest, can be relied on to give date and place for each of his observations? Why, a twelvemonth might see accused and witness parted by miles of distance or by death, and memory and interest alike obscured by numerous personal preoccupations. Then, surely, the Bill can accomplish little if it has no power in places where men do mostly congregate. Why should it not rather find its greatest utility in the larger towns? The purpose of this measure must command universal respect and sympathy, but its promoters, we consider, would be wisely guided in recasting its present unpractical shape. We are further of opinion that for a tentative measure, as it must no doubt be considered, it embraces too great an area. It were best limited, at least at the outset, to the case of confirmed and habitual drunkards.

THE PHYSIOLOGY OF WEARINESS.

IN delivering the Rede Lecture at Cambridge on the 14th inst. Professor Michael Foster chose as his theme "Weariness." Those acquainted with Professor Foster's works and the combined breadth and caution of his generalisations will know that no one could have been selected who was more likely to do justice to a subject which has a personal interest for every worker. Commencing with a simple muscular act, the lecturer analysed the physiological phenomena of weariness in such and in the higher work of mental operations. He clearly emphasised the two prime factors in the production of exhaustion—too rapid expenditure of capital or force and the accumulation of the products of activity in the working organ. After proving that "the nervous system was a candle which could not profitably be burned at both ends at once," Professor Foster went on to show that endurance depended largely upon "blood adequately pure" and that the readiness with which "the internal scavengers freed blood from the poison which the muscles (and other active organs) poured into it" was proportionate to the staying power of the worker. "The hunted hare died, not because he was choked for want of breath, not because his heart stood still, its store of energy having given out, but because a poisoned blood poisoned his brain and his whole body." The "humbler helpmates" of the active organism—that is, the nutritive, excretory and metabolic functions of the body—were of the highest importance to the enduring activity of the higher executive mechanism. Professor Foster touched upon, but did not treat, the subject of "inertia or laziness," and we trust that he will on some future occasion afford us the benefit of his views upon this phase of the subject. That "unwillingness to stir" greatly increases the work of compulsory stirring is matter of constant observation, and the "labour of love," though greater than that of compulsion, may be borne with much less effort and with much less weariness than the latter.

SALUTATION PLACE.

THE Public Health Committee of the London County Council has presented to the latter a report recommending that a number of houses known as Salutation-place in the parish of Lambeth should be demolished under section 39 of the Housing of the Working Classes Act and that an improvement scheme should be prepared for the area. The houses are situated in a hollow, are badly constructed and have no through ventilation. There can be no question as to the need for the improvement of the area, but the property belongs to the Duchy of Cornwall and, as Crown property, is exempt from the provisions of the Act. The Council could, however, under Part I. of the Act, if the freeholder were an assenting party, carry out the scheme by agreement. This is evidently the course which is most to be desired, but the Council has been, it is stated, unable to make a satisfactory arrangement with the Duchy, whose business, having regard to future life interests, has to be conducted on principles which meet the approval of the Treasury. There is no freedom of action such as that enjoyed by private freeholders, and hence, until the termination of the leases makes the Duchy master of the situation, it is probable that the area will remain much as it is.

CUTANEOUS EXCRETION OF CARBON DIOXIDE AND OF WATER.

SCHIERBECK gives, in the *Archiv für Anatomie und Physiologie* (1893), the results of some experiments he has made on the elimination through the skin of carbon dioxide and water at temperatures between 30° C. and 39° C. (86° F. to 102° F). The person experimented on was placed in a box closed on all sides except that it had an opening through which the head protruded, and this was ventilated by a large Pettenkofer's apparatus. He was sometimes naked and sometimes clothed with thick woollen material. The excretion of carbon dioxide at temperatures between 29° and 33° C. amounted with very small variations to 0·35 grammes per hour, or about 8 grammes (123 grains) per twenty-four hours, the quantity discharged being independent of the clothing. If the temperature rose above 33° C. (92° F.) the elimination of carbon dioxide underwent a sudden increase, so that at about 33·5° C. it was doubled. It continued to augment with the further increase of temperature, but not with the same rapidity, up to 1·2 grammes per hour at 38·5° C., which corresponds to about 28 grammes (or 432 grains) in the twenty-four hours. As regards the excretion of water, this only consisted of insensible perspiration up to 33° C. (92° F.); but above that temperature it became sensible perspiration, or, in other words, sweating set in. The "critical point" was thus identical for the elimination both of carbon dioxide and of water. The discharge of water did not, however, show such a sudden increase as that of carbon dioxide, but rose more uniformly in accordance with the increasing temperature. It is therefore difficult to give any general statement showing the amount of water eliminated by the skin, since the temperature ordinarily

varies within considerable limits; but if we admit that the temperature usually present when a person is clothed is 32° C. (90° F.), the insensible perspiration amounts every twenty-four hours to from two to three litres of water.

FOREIGN UNIVERSITY INTELLIGENCE.

New York (Post-Graduate School).—Drs. A. Palmer Dudley and George Edebohls have been appointed Professors of Gynæcology and Dr. George T. Elliot Professor of Dermatology.

Paris.—The chair of Clinical Mental Pathology is officially declared vacant.

Pennsylvania, University of.—Dr. Charles K. Mills has been appointed Professor of Psychiatry and Forensic Medicine.

St. Petersburg (Military Medical Academy).—Dr. J. E. Shavlovski has been recognised as *privat-docent* in Anatomy.

Tomsk.—The following Extraordinary Professors have been promoted to Ordinary Professorships: Dr. Anfimoff (Psychiatry), Dr. Jerofeieff (Ophthalmology) and Dr. Grammatikati (Midwifery and Gynæcology).

DEATHS OF EMINENT FOREIGN MEDICAL MEN.

THE deaths of the following distinguished members of the medical profession abroad have been announced:—Dr. Peter, Professor of Clinical Medicine in the Paris Faculty of Medicine; an obituary notice will be found in another column.—Dr. J. Wojtaszek, *privat-docent* in Pharmacognosis and City Sanitary Officer in Cracow, of typhus fever contracted during the discharge of his duties.—Dr. Modrzejewski of Warsaw, who has written on deaf-mutism and a number of other special subjects of various kinds.—Dr. Frederick A. Salzer, Professor of Surgery in the University of Utrecht.—Dr. Delasiauve, formerly physician to the Salpétrière, Paris.

THE international competition for the prizes offered by their Majesties the King and Queen of Italy, as patrons of the Croce Rossa Italiana, for "the best contrivance to facilitate the transport of the wounded from the battlefield" has been postponed for another month, and the exhibition of the articles in illustration of the said contrivance will be held from Sept. 15th till Oct. 15th next, in order to coincide with the International Exposition of Medicine and Hygiene which will take place in Rome between those dates. The last day, therefore, on which the presentation of the articles in question can be made will be, not the 30th inst., but July 31st.

IT has been determined, as part of the programme of the celebration of the jubilee of the Fellowship of the Royal College of Surgeons of England, that a dinner of the Fellows of the College shall be held in the Whitehall Room of the Hôtel Métropole on Thursday, July 6th next, at 7.15 for 7.30 P.M. precisely. Sir James Paget, Bart., F.R.S., has consented to take the chair. Information can be obtained from Mr. Woodhouse Braine at the College.

THE summer dinner of the Irish Medical Schools' and Graduates' Association will take place at the Queen's Hotel, Reading, to-day (Saturday, June 17th), at 6.30 P.M., the President, Professor Cuming, M.A., M.D., in the chair. Dinner tickets and cards of invitation for guests may be obtained from the Secretary, Dr. Cagney, 93, Wimpole-street, London.

DR. DANIEL JOHN LEECH will deliver the Croonian Lectures on the Physiological Action and Therapeutic Uses of the Nitrites and Allied Compounds at the Royal College of Physicians of London, Pall-mall East, on June 20th, 22nd, 27th and 29th.

A PUBLIC sitting will be held on the 20th inst. by the Royal Commission on the Metropolitan Water-supply to receive evidence with regard to the epidemic prevalence of enteric fever in the Tees Valley in 1890-91. The inquiry has been thought necessary on account of the suspicion which has been thrown on the purity of the river water supplied for domestic purposes.

THE Royal Commission on Vaccination met on Wednesday last, Sir James Paget in the chair. Dr. F. W. Barry, one of the medical inspectors of the Local Government Board, was further examined with regard to his report on the Small-pox Epidemic in Sheffield in 1887, and also with regard to the value of vaccination as a preventive to the spread of the disease.

WE regret to learn that, owing to failing health, Deputy-Surgeon-General Partridge has tendered his resignation of his appointment on the India Office Medical Board. The appointment is open to retired officers of the Indian Medical Service resident in or near London and is tenable for three years. The selection of a successor is shortly to be made by the Secretary of State for India.

WE are asked to state that the dinner of the Volunteer Medical Staff, which was to have been held on Thursday, June 22nd, and at which Lord Sandhurst had promised to preside, is, owing to various circumstances, postponed until the autumn.

A MEETING will be held at University College on Thursday, the 22nd inst., at 5 P.M., to consider the proposal to establish a memorial to the late Professor Marcus Beck. The chair will be taken by Professor Erichsen, President of University College.

DR. RADCLIFFE CROCKER will, we understand, give an address on Dermatology in the month of September before the Post-graduate School of Chicago.

ARMY MEDICAL STAFF.

THE annual dinner of the Army Medical Staff, which was held in the Whitehall-rooms of the Hôtel Métropole, London, on Monday, June 12th, was the occasion of a very pleasant and well attended meeting. The toast list was commendably brief, the only toast given being that one which is invariably honoured whenever and wherever Englishmen meet together on social occasions—the health of Her Most Gracious Majesty the Queen. In no spirit of criticism but with a desire to still further enhance the success of these enjoyable gatherings we may perhaps be permitted to point out that, as will be seen from the list printed below of Surgeon-Captains, the younger members of the Service were not numerically so well represented as were their seniors. We regret this, because the future of every service depends upon the junior members of it in the present. From amongst them the future heads and superior officers of the department will in course of time have to be selected.

The following is a list of officers and guests present:

Directors-General Sir T. Crawford, K.C.B., and Sir W. A. Mackinnon, K.C.B. (in the chair).

Surgeon-Major-Generals R. Bowen, J. G. Faught, A. H. Fraser, W. H. Muschamp, J. B. C. Reade, C.B., P. B. Smith, W. Stewart, J. J. Thompson, W. A. Thomson and F. Wade.

Surgeon-Colonels H. Cayley, A. F. Churchill, O. Codrington, W. G. Don, A. G. Elkington, A. A. Gore, J. B. Hamilton, C. H. Harvey, J. Inkson, J. Jameson, J. H. Jeffcoat, C. A. Maunsell, E. McGrath, T. F. O'Dwyer, E. H. Roberts, W. Sly, H. R. L. Veale and J. Watts.

Brigade-Surgeon-Lieutenant-Colonels J. F. Beattie, G. Evatt, J. E. Fishbourne, G. C. Gribbon, J. Hector, J. W. Hulseberg, J. G. Lenk, C. Mackinnon, W. McWatters, T. R. Mould, H. S. Muir, A. B. Robinson, W. G. Ross, F. P

Staples, W. F. Stevenson, E. D. Tomlinson, W. W. Tomlinson, W. J. Wilson, T. Wright and T. W. Wright.

Surgeon-Lieutenant-Colonels F. E. Barrow, J. M. Beamish, D. B. Brown. A. L. Browne, W. C. Grant, G. D. N. Leake, J. W. O. M. Martin, W. H. McNamara and C. F. Pollock.

Surgeon-Majors W. G. Bedford, J. T. Cavey, W. A. Carte, J. J. Crean, P. M. Ellis, J. J. Falvey, T. J. Gallwey, J. J. Green, H. Grier, J. P. Hunt, G. A. Hughes, R. Jennings, J. J. Lamprey, T. Ligertwood, N. McCreery, T. W. Patterson, D.S.O., W. S. Pratt, E. R. Power, H. D. Rowan, H. Saunders and W. E. Webb.

Surgeon-Captains S. G. Allen, W. Babtie, A. L. H. Dixon, H. P. Elkington, J. M'Laughlin, S. C. Philson, H. I. Power, W. P. Squire and E. O. Wright.

The following guests were present: Sir Joseph Fayrer, K.C.S.I., Mr. J. N. Dick, C.B. (Director-General, Royal Navy), Mr. V. Holt, Dr. Dawson Williams, and Mr. Thomas Wakley, jun.

Sir Andrew Clark (President of the Royal College of Physicians) and Mr. T. Bryant (President of the Royal College of Surgeons) were unavoidably prevented from attending.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AT an ordinary meeting of the Council of the College held on Thursday, the 8th inst., Mr. THOMAS BRYANT, President, in the chair, the minutes of the last ordinary meeting of the Council were read and confirmed.

The death of Mr. Marcus Beck, Member of the Council and Member of the Court of Examiners in Surgery, was reported by the Secretary and a vote of condolence with the family unanimously passed.

A report from the Examiners in Physiology for the Fellowship of the College suggesting certain alterations in the examination, including the institution of a more practical examination, was read and referred to the Nomination Committee for consideration.

The following new appointments were made: Mr. W. H. A. Jacobson as an Examiner in Anatomy for the Fellowship; Dr. Montagu Handfield-Jones as an Examiner in Midwifery for the Conjoint Examination. Only one Examiner in Physiology was appointed.

The vacancy on the Board of Examiners in Surgery, as well as the vacancy caused by the resignation of Mr. S. J. Hutchinson as a member of the Board of Examiners in Dental Surgery, will be filled at the Quarterly Council in July.

The Secretary reported that he had received a letter from the clerk to the Royal Commission on Vaccination stating that the resolution of the Council respecting vaccination will be laid before the Commission at its next sitting.

The thanks of the Council were given to the President of the College for his report on the proceedings of the General Medical Council and for his services thereon as the representative of the Council.

In accordance with a request from the Royal College of Physicians, a committee, consisting of Sir William MacCormac, Mr. Howse, Mr. Langton and Mr. Pick, was appointed to confer with a committee appointed by them of equal number (Sir Dyce Duckworth, Dr. Church, Dr. Dickinson and Dr. Cheadle) on the whole subject of fees to be paid for the several qualifications granted by the respective Colleges and to take into consideration the expenditure incurred by the respective Colleges at the Examination Hall.

A motion brought forward by Mr. Banks suggesting changes in the regulations of the Conjoint Board with respect to systematic practical instruction in medicine, surgery and midwifery was referred to the October meeting of the Council.

The next meeting of the Council will be held on July 7th.

Mr. A. T. Norton (Member 1862, Fellow 1867) proposes to stand at the election of Members of the Council in July. The various candidates are, therefore, Messrs. Macnamara (Fellow, 1875) and Pemberton (Fellow, 1878) (seeking re-election), and Messrs. Norton (Fellow, 1867), Anderson (Fellow, 1869), Davies Colley (Fellow, 1870), Bloxam (Fellow, 1871), Page (Fellow, 1871), Morris (Fellow, 1873), McCarthy (Fellow, 1873), W. H. Bennett (Fellow, 1877), and Mayo Robson (Fellow, 1879).

THE ROYAL BRITISH NURSES' ASSOCIATION.

THE Royal Charter which Her Majesty the Queen has granted to the Royal British Nurses' Association and of which we have received a copy makes it a body corporate with a common seal, with a "capacity to sue and be sued in their corporate name, and for the purposes of the said corporation to take, purchase and hold any personal property, and also, notwithstanding the Statutes of Mortmain, any messuage, land and hereditaments, provided that the yearly value of such messuages, land and hereditaments shall not in the whole exceed £2000, the yearly value of such messuages, land and hereditaments being for that purpose taken to be the yearly value thereof at the times they are respectively acquired by the corporation; with power to sell, grant and demise mortgage or exchange and dispose of the said property, messuages, lands and hereditaments, or any part thereof; provided that the corporation shall apply its profits, if any, or income solely in promoting its objects and for no other purpose."

The purposes of the Corporation are the following: 1. The founding and maintenance of schemes for the benefit of nurses in the practice of their profession and in times of adversity, sickness and old age. 2. The maintenance of an office or offices for supplying information to persons seeking for nurses and to persons seeking for employment as nurses. 3. The maintenance and publication of a list of persons who may have applied to the corporation to have their names entered therein as nurses, and whom the corporation may think fit to enter therein from time to time, coupled with such information about each person so entered as to the corporation may from time to time seem desirable. 4. The promotion of conferences, public meetings and lectures in connexion with the general work of the corporation. 5. The doing anything incidental or conducive to carrying into effect the foregoing purposes.

The corporation have been endowed with powers of affiliation and also power to erect such buildings as may be deemed fitting for the purposes of the association.

As to the President and honorary officers, on the resignation or death of the President or of any honorary officer, and as occasion may arise, the vacancies shall be filled up by the General Council, over which the President shall preside.

In reference to the qualification of members of the association, the corporation may by by-law regulate the qualifications of candidates for election, but no such by-law shall come into force until approved by the Lords of the Privy Council.

The General Council shall be the governing body, with whom the ultimate decision on any matter affecting the corporation shall rest—such as expulsion or suspension of members.

The General Council shall annually elect to be members of an executive committee such number of members of the corporation as may be prescribed by the by-laws for the time being in force.

CHOLERA.

THE most important news which we have to chronicle this week in regard to the progress of epidemic cholera is connected with the serious outbreak of that disease at Mecca, where the numbers of pilgrims this season are expected to exceed those of any previous year, and with its prevalence in many places in Central and Southern France. Several cases have occurred at Nimes, Montpellier, Cette, Narbonne, Bessèges, Frontignan and other places. The total deaths from cholera that have occurred at Alais up to June 12th amount to seventy and the disease has not apparently yet disappeared. A case of imported cholera is reported at Lyons. The mortality amongst the pilgrims at Mecca is stated to amount to sixty or seventy a day. The total number of pilgrims is double what it was last year. As many as 40,000 have passed through Suez and the same number will probably arrive at Mecca from Eastern countries and by overland caravans. The Egyptian Government is stated to be taking

great precautions to safeguard their country against the disease; but the great pity is that precautions of the most elementary sanitary kind are not taken at Mecca itself and along the route to provide good water for the pilgrims, and to prevent overcrowding and fouling of the soil in anticipation of the occurrence of these outbreaks. It is surprising that greater attention is not paid by congresses and European health bureaux to this source of danger than appears to be the case.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In thirty-three of the largest English towns 6555 births and 3597 deaths were registered during the week ending June 10th. The annual rate of mortality in these towns, which had been 17·5 and 17·9 per 1000 in the preceding two weeks, further rose last week to 18·2. In London the rate was 18·1 per 1000, whilst it averaged 18·3 in the thirty-two provincial towns. The lowest rates in these towns were 9·7 in Nottingham, 10·7 in Huddersfield, 10·9 in Gateshead, 11·5 in Croydon and 13·1 in Portsmouth; the highest rates were 21·3 in Bolton, 22·2 in Plymouth, 22·3 in Blackburn, 23·3 in Sunderland and 24·7 in Liverpool. The 3597 deaths included 473 which were referred to the principal zymotic diseases, against 434 and 415 in the preceding two weeks; of these, 148 resulted from diarrhœa, 117 from measles, 66 from whooping-cough, 57 from diphtheria, 44 from scarlet fever, 21 from "fever" (principally enteric) and 20 from small-pox. No fatal case of any of these diseases occurred last week in Swansea, Wolverhampton, Nottingham or Derby; whilst they caused the highest death-rates in Birkenhead, Plymouth, Blackburn, Liverpool, Leicester and Preston. The greatest mortality from measles occurred in Huddersfield, Newcastle-upon-Tyne, Liverpool, Gateshead, Preston, Blackburn and Plymouth; from scarlet fever in Burnley; from whooping-cough in Halifax and in Brighton; and from diarrhœa in Blackburn, Preston, Liverpool, Leicester and Birkenhead. The mortality from "fever" showed no marked excess in any of the large towns. The 57 deaths from diphtheria included 39 in London, 3 in Croydon and 3 in Cardiff. Seven fatal cases of small-pox were registered in London, 3 in West Ham, 2 in Birmingham, 2 in Manchester, 2 in Halifax and 1 each in Bristol, Leicester, Oldham and Bradford; 495 cases of this disease were under treatment in the Metropolitan Asylum Hospitals and in the Highgate Small-pox Hospital on Saturday last, against 566, 560 and 551 at the end of the preceding three weeks; 80 new cases were admitted during the week, against 113, 111 and 110 in the preceding three weeks. The number of scarlet fever patients in the Metropolitan Asylum Hospitals and in the London Fever Hospital at the end of the week was 2649, against 2345, 2493 and 2582 on the preceding three Saturdays; 290 new cases were admitted during the week, against 301 and 303 in the preceding two weeks. The deaths referred to diseases of the respiratory organs in London, which had been 268 and 290 in the preceding two weeks, declined again to 233 last week and were 27 below the corrected average. The causes of 61, or 1·7 per cent., of the deaths in the thirty-three towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Portsmouth, Bolton, Manchester, Oldham, Sunderland and in ten other smaller towns; the largest proportions of uncertified deaths were registered in West Ham, Birmingham, Salford, Blackburn and Halifax.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 20·3 and 19·2 per 1000 in the preceding two weeks, rose again to 21·2 during the week ending June 10th, and exceeded by 3·0 per 1000 the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 16·5 in Aberdeen and 17·6 in Leith to 26·5 in Greenock and 28·6 in Paisley. The 598 deaths in these towns included 46 which were referred to measles, 26 to whooping-cough, 16 to diarrhœa, 17 to scarlet fever, 7 to diphtheria, 4 to "fever," and 1 to small-pox. In all, 107 deaths resulted from these principal zymotic diseases, against 93 and 92 in the preceding two weeks. These 107 deaths were equal to an annual rate of 3·8 per 1000, which exceeded by 1·4 the mean rate last week from the same diseases in the thirty-three large English towns. The fatal cases of measles, which had been 42 and 45 in the preceding two weeks, were 46 last week, of which 33 occurred in Glasgow, 7 in Greenock and 4 in Edinburgh. The deaths referred to whooping-cough, which had been 25 and 21 in the preceding two weeks, rose again to 26 last week and included 19 in Glasgow and 3 in Edinburgh. The 7 fatal cases of scarlet fever exceeded by 1 the number in the previous week and included 5 in Glasgow. The deaths from diphtheria, which had been 5 and 2 in the preceding two weeks, rose again to 7 last week, of which 3 occurred in Glasgow and 2 in Leith. The 4 fatal cases of "fever" included 2 in Dundee; and the death from small-pox occurred in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had declined from 122 to 88 in the preceding three weeks, rose again to 107 last week, but were 17 below the number recorded in the corresponding week of last year. The causes of 47, or nearly 8 per cent., of the deaths in the eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 25·1 and 27·3 per 1000 in the preceding two weeks, declined again to 23·7 during the week ending June 10th. During the past ten weeks of the current quarter the death-rate in the city has averaged 25·6 per 1000, against 18·9 in London and 17·7 in Edinburgh. The 159 deaths registered in Dublin during the week under notice showed a decline of 24 from the number in the preceding week and included 9 which were referred to the principal zymotic diseases, against 15 and 13 in the preceding two weeks. Of these, 5 resulted from measles, 2 from whooping-cough, 2 from "fever," and not one either from small-pox, scarlet fever, diphtheria or diarrhœa. These 9 deaths were equal to an annual rate of 1·3 per 1000, the zymotic death-rate during the same period being 2·6 in London and 1·8 in Edinburgh. The fatal cases of measles, which had been 5 and 4 in the preceding two weeks, rose again to 5 last week. The deaths referred to different forms of "fever," which had been 3 in each of the preceding two weeks, declined to 2 last week. The 2 fatal cases of whooping-cough corresponded with the number in the preceding week. The 159 deaths registered in Dublin last week included 26 of infants under one year of age and 33 of persons aged upwards of sixty years; the deaths both of infants and of elderly persons showed a decline from those recorded in recent weeks. Three inquest cases and 1 death from violence were registered; and 66, or more than a third, of the deaths occurred in public institutions. The causes of 9, or nearly 6 per cent., of the deaths registered in the city last week were not certified.

VITAL STATISTICS OF LONDON DURING MAY, 1893.

In the accompanying table will be found summarised complete statistics relating to sickness and mortality during May in each of the forty-one sanitary districts of London. With regard to the notified cases of infectious disease in the metropolis during last month, it appears that the number of persons reported to be suffering from one or other of the nine diseases in the accompanying table was equal to 13·5 per 1000 of the population, estimated at 4,305,551 persons in the middle of this year. In the preceding two months the rates were respectively 8·6 and 10·5 per 1000. Amongst the various sanitary districts the rates last month were considerably below the average in Kensington, Fulham, St. George Hanover-square, St. James Westminster, Greenwich, and Lewisham; whilst they showed the largest excess in Marylebone, Clerkenwell, Whitechapel, St. George-in-the-East, Mile End Old Town, Poplar, St. George Southwark, and Rotherhithe. The prevalence of small-pox in London showed a further increase during May, an average of 134 cases weekly being notified, against 20, 40, 61, and 118 in the preceding four months; of the 668 cases notified during last month, 62 belonged to Marylebone, 51 to Rotherhithe, 38 to St. Pancras, 34 to Camberwell, 32 to Poplar, 30 to Mile End Old Town, 30 to St. George Southwark, 27 to Whitechapel, 27 to Greenwich, and 26 to Battersea sanitary districts. The Metropolitan Asylum Hospitals contained 516 small-pox patients at the end of May, against numbers increasing from 39 to 448 at the end of the preceding five months; the weekly admissions averaged 117, against 20, 38, 55, and 106 in the preceding four months. The prevalence of scarlet fever in London showed a marked further increase upon that recorded in recent months; this

MONTHLY ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON.—MAY, 1893.

(Specially compiled for THE LANCET.)

Sanitary areas	Estimated population in the middle of 1893.	Notified Cases of Infectious Disease.											Deaths from Principal Infectious Diseases.												
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cholera.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.†	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Diarrhœa.	Total.	Annual rate per 1000 persons living.	Deaths from all causes.	Death-rate per 1000 living.	Deaths of infants under one year to 1000 births.
LONDON	4,305,551	608	2859	1100	5	212	17	28	702	3	5534	13·5	48	142	115	158	155	4	57	—	133	932	2·3	7312	17·7	121
West Districts.																									
Paddington	120,277	16	65	26	—	8	—	2	20	—	137	11·9	1	—	1	6	7	—	—	—	3	18	1·6	173	15·0	122
Kensington	167,038	9	74	32	1	7	3	1	15	—	142	8·9	2	—	7	5	1	—	—	—	5	20	1·2	223	13·9	118
Hammersmith	103,674	5	72	16	—	—	—	1	19	—	123	12·4	—	—	—	3	7	—	—	—	—	10	1·0	145	14·6	95
Fulham	103,075	10	45	17	—	2	2	—	15	—	91	9·2	1	—	5	6	8	—	—	—	6	26	2·6	171	17·3	149
Chelsea	88,114	11	58	12	—	7	—	—	15	—	103	16·9	—	1	1	2	6	—	1	—	4	15	1·6	186	14·5	147
St. George Hanover square	75,825	5	44	5	—	6	1	—	9	—	70	9·6	1	—	4	3	4	—	1	—	—	13	1·8	105	14·3	110
Westminster	54,761	11	45	11	—	4	—	1	11	—	83	15·8	—	—	2	4	1	—	2	—	—	9	1·7	120	22·9	150
St. James Westminster	23,873	1	13	4	—	—	—	—	4	—	22	9·6	—	—	1	1	1	—	—	—	—	3	1·3	41	17·9	118
North Districts.																									
Marylebone	139,546	62	80	56	1	3	—	1	41	—	244	18·2	2	2	3	15	8	—	3	—	2	35	2·6	297	22·2	150
Hampstead	73,949	9	52	37	—	2	1	—	6	—	107	15·1	2	—	5	9	—	—	—	—	1	17	2·4	79	11·1	78
St. Pancras	234,125	18	172	56	—	9	1	5	26	—	317	14·1	1	11	7	14	12	—	2	—	7	54	2·4	416	18·5	140
Islington	338,608	10	248	71	—	11	—	1	48	—	399	12·7	—	28	9	17	21	—	3	—	12	90	2·9	545	17·3	137
Hackney	240,177	7	205	85	—	23	1	—	40	—	361	15·7	—	—	3	19	12	—	1	—	7	42	1·8	245	15·0	99
Central Districts.																									
St. Giles	38,511	13	23	7	—	—	—	—	6	—	49	13·3	2	—	—	4	1	—	—	—	—	7	1·9	86	23·3	108
St. Martin-in-the-Fields	13,911	3	15	3	—	1	—	—	1	—	23	17·2	—	—	—	1	—	—	—	—	—	1	0·7	28	21·0	95
Strand	23,568	5	13	13	—	—	—	—	1	—	32	14·2	1	—	1	2	—	—	—	—	1	5	2·2	60	26·6	113
Holborn	12,646	13	16	11	—	2	—	—	11	—	53	16·9	—	4	—	5	—	—	—	—	—	9	2·9	75	24·0	133
Clerkenwell	65,163	2	69	37	—	1	—	1	15	—	125	20·0	—	9	2	14	4	—	—	—	6	35	5·6	148	23·7	116
St. Luke	41,406	7	17	13	—	7	—	—	17	—	61	15·4	—	2	2	4	5	—	1	—	1	15	3·8	107	27·0	130
City of London	35,283	11	35	7	—	2	—	—	3	—	58	17·1	1	2	1	1	—	—	—	—	1	6	1·8	78	23·0	104
East Districts.																									
Shoreditch	123,425	5	86	42	—	4	—	1	23	—	161	13·6	—	9	4	10	7	—	1	—	6	37	3·1	246	20·8	126
Bethnal Green	159,615	11	84	54	—	7	—	—	19	—	175	14·1	—	2	6	6	4	—	—	—	2	20	1·6	286	23·0	105
Whitechapel	75,163	27	63	15	—	3	—	—	18	—	126	17·5	—	6	—	7	—	—	—	—	6	19	2·6	174	24·1	147
St. George-in-the-East	45,182	4	13	29	—	7	—	2	7	—	62	18·9	—	4	—	6	—	—	—	—	7	17	3·9	120	27·7	164
Limehouse	67,386	19	31	18	—	8	—	2	11	—	89	16·2	1	1	5	7	10	1	—	—	3	28	5·1	165	30·0	191
Mile End Old Town	108,006	30	97	31	—	10	—	—	14	—	182	17·6	3	—	5	8	1	—	4	—	4	25	2·4	214	20·7	132
Poplar	168,576	32	170	82	1	24	—	—	57	—	346	21·4	4	1	9	13	5	1	7	—	10	50	3·1	334	20·6	137
South Districts.																									
St. Saviour Southwark	26,823	—	18	5	—	1	—	—	4	—	28	10·9	—	—	1	1	2	—	—	—	1	5	1·9	52	20·2	169
St. George Southwark	59,952	20	54	8	—	1	1	—	14	—	108	18·8	4	3	2	2	7	—	1	—	4	23	4·0	132	23·0	158
Newington	117,420	14	69	24	—	4	—	2	22	—	135	12·0	1	6	2	4	5	—	2	—	3	23	2·0	205	18·2	105
St. Olave Southwark	12,861	3	7	2	—	—	—	—	3	—	15	12·2	—	—	—	1	—	—	1	—	—	2	1·6	22	17·8	85
Bermondsey	84,244	19	55	33	1	—	—	—	13	—	111	13·7	2	—	—	6	8	1	—	—	2	22	2·7	170	21·0	107
Rotherhithe	39,764	51	16	16	—	1	—	—	2	—	86	22·6	8	—	2	2	4	—	—	—	—	16	4·2	70	18·4	96
Lambeth	280,567	22	140	77	1	15	3	3	49	3	313	11·6	1	4	5	15	10	1	3	—	10	49	1·8	488	16·3	88
Battersea	160,633	26	127	49	—	15	1	1	16	—	245	15·9	1	4	—	15	15	—	1	—	3	39	2·5	209	13·6	128
Wandsworth	169,879	14	114	22	—	3	—	1	22	—	176	10·8	1	2	3	3	2	—	—	—	3	14	0·9	186	11·4	98
Camberwell	246,837	34	125	30	—	7	2	1	37	—	236	10·0	3	7	4	3	13	—	3	—	4	37	1·6	266	15·5	107
Greenwich	173,249	27	72	21	—	2	1	—	25	—	148	8·9	—	20	1	6	3	—	—	—	5	35	2·1	205	16·9	126
Lewisham (excluding Penge)	76,653	6	24	14	—	—	—	—	9	—	53	7·2	3	2	—	4	1	—	—	—	3	13	1·8	87	11·8	96
Woolwich	41,794	15	16	1	—	1	—	—	5	—	48	12·0	1	3	2	1	2	—	—	—	—	9	2·2	68	17·0	95
Plumstead	54,192	19	37	8	—	2	—	2	9	—	127	14·1	1	9	4	1	3	—	—	—	1	19	2·1	156	13·9	69
Port of London	—	2	—	—	—	2	—	—	—	—	4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including 12 cases of membranous croup.

† Including deaths from membranous croup.

disease was proportionally most prevalent in Westminster, Hackney, St. Martin-in-the-Fields, Clerkenwell, City of London, Whitechapel, Mile End Old Town, Poplar, and St. George Southwark sanitary districts. The Metropolitan Asylum Hospitals contained 2511 scarlet fever patients at the end of May, against 1938 and 2024 at the end of the preceding two months; the weekly admissions averaged 309, against 196 and 219 in the previous two months. Diphtheria also showed increased prevalence during the month under notice; amongst the various sanitary districts this disease showed the highest proportional prevalence in Marylebone, Hampstead, Strand, Clerkenwell, Bethnal Green, St. George-in-the-East, Poplar, and Rotherhithe. There were 296 cases of diphtheria under treatment in the Metropolitan Asylum Hospitals at the end of May, against 283 and 302 at the end of the preceding two months; the weekly admissions averaged 64, against 50 and 61 in the previous two months. Enteric fever was proportionally most prevalent during May in Hackney, St. George-in-the-East, Limehouse, Mile End Old Town, and Poplar sanitary districts. The Metropolitan Asylum Hospitals contained 38 enteric fever patients at the end of May, against 37 and 50 at the end of the preceding two months; the weekly admissions averaged 6, against 10, 7 and 9 in the previous three months. Erysipelas showed the highest proportional prevalence during the month under notice in Marylebone, Holborn, St. Luke, Limehouse, Poplar, and St. George Southwark sanitary districts. Five cases of puerperal fever were notified during May in St. Pancras, and 3 in Lambeth sanitary districts.

The mortality statistics in the accompanying table relate to the deaths of persons actually belonging to the various metropolitan sanitary districts, the deaths occurring in the institutions of London having been distributed amongst the various sanitary districts in which the patients had previously resided. The distribution of these deaths, and especially of those resulting from zymotic diseases, affords the most trustworthy data that can be secured upon which to calculate reliable rates of mortality. During the five weeks ending Saturday, June 3rd, the deaths of 7312 persons belonging to London were registered, equal to an annual rate of 17·7 per 1000, against 19·8 in each of the preceding two months. The lowest death-rates during May in the various sanitary districts were 11·1 in Hampstead, 11·4 in Wandsworth, 11·8 in Lewisham (excluding Penge), 13·6 in Battersea, 13·9 in Kensington and in Plumstead, and 14·3 in St. George Hanover-square; in the other sanitary districts the rates ranged upwards to 23·3 in St. Giles, 23·7 in Clerkenwell, 24·0 in Holborn, 24·1 in Whitechapel, 26·6 in Strand, 27·0 in St. Luke, 27·7 in St. George-in-the-East, and 30·0 in Limehouse. During the five weeks of May 932 deaths were referred to the principal zymotic diseases in London; of these, 258 resulted from diphtheria, 195 from whooping-cough, 142 from measles, 133 from diarrhœa, 115 from scarlet fever, 48 from small-pox, and 41 from different forms of "fever" (including 37 from enteric fever and 4 from typhus fever). These 932 deaths were equal to an annual rate of 2·3 per 1000, against 1·9, 2·0, and 2·1 in the preceding three months. Amongst the various sanitary districts the lowest zymotic death-rates were recorded in Kensington, Hammersmith, St. James Westminster, St. Martin-in-the-Fields, and Wandsworth; and the highest rates in Clerkenwell, St. Luke, Shoreditch, St. George-in-the-East, Limehouse, Poplar, St. George Southwark, and Rotherhithe. Forty-eight fatal cases of small-pox were registered in London during the month under notice, the corrected average number in the corresponding periods of the preceding ten years being 34; of these 48 deaths, 8 belonged to Rotherhithe, 4 to Poplar, 4 to St. George Southwark, 3 to Mile End Old Town, 3 to Camberwell, and 3 to Lewisham sanitary districts. The 142 deaths referred to measles were considerably less than half the average number; amongst the various sanitary districts this disease showed the highest proportional fatality in Islington, Holborn, Clerkenwell, Greenwich, and Plumstead. The 115 fatal cases of scarlet fever were 32 below the corrected average; this disease was proportionally most fatal in Hampstead, Bethnal Green, Limehouse, Poplar, and Bermondsey sanitary districts. The 258 deaths referred to diphtheria were considerably more than double the corrected average number; amongst the various sanitary districts this disease showed the highest proportional fatality in Marylebone, Hampstead, St. Giles, Holborn, Clerkenwell, St. Luke, St. George-in-the-East, Whitechapel, Limehouse, and Bermondsey. The 195 fatal cases of whooping-cough were as many as 133 below the average number; this disease was proportionally most fatal in Fulham, St. Luke, Limehouse, St. George Southwark, Rotherhithe, and Battersea sanitary districts. The 41 deaths referred to different forms of "fever" were 11 below the corrected average; amongst the various sanitary districts the highest "fever" death-rates were recorded in Mile End Old Town and Poplar. The 133 fatal cases of diarrhœa were nearly double the corrected average. In conclusion, it may be stated that the mortality in London during May from these principal zymotic diseases was 9 per cent. below the average.

Infant mortality in London during the month under notice, measured by the proportion of deaths under one year of age to registered births, was equal to 121 per 1000, and was slightly below the average; the lowest rates of infant mortality were recorded in Hampstead, St. Olave Southwark, Lambeth, Lewisham, and Plumstead; the highest rates in Fulham, Marylebone, City of London, St. George-in-the-East, Limehouse, St. Saviour Southwark, and St. George Southwark sanitary districts.

THE SERVICES.

MOVEMENTS IN THE MEDICAL STAFF.

SURGEON-CAPTAIN J. M. REID, A.M.S., lately in Medical Charge of the Staff at Netley, proceeded to Portsmouth on the 5th inst. to embark on H.M.S. *Tamar* as Medical Officer in Charge of troops proceeding to Cape Town and the Mauritius. Surgeon-Colonel Inkson has taken over charge of the Southern District, in succession to Surgeon-Major-General Rudd, retired. Brigade-Surgeon-Lieutenant-Colonel Keir, retired, has been appointed to the half-pay post at Hamilton. Surgeon-Captain Dowman has joined for duty in Dublin. Surgeon-Lieutenant More has been transferred from York to Beverley. Surgeon-Captain Tyrrell and Surgeon-Lieutenant Bray have rejoined at Aldershot on completion of their duties at the Military Tournament. Brigade-Surgeon-Lieutenant-Colonel McWatters from Portsmouth and Surgeon-Lieutenant Mitchell from Chatham have proceeded on leave.

The retired pay appointments at Sheffield, Clonmel and Galway are now vacant.

INDIA AND THE INDIAN MEDICAL SERVICE.

The following appointments are announced:—23rd Bengal Infantry: Surgeon-Captain W. B. Lane, to the Medical Charge of the Regiment. 24th Bengal Infantry: Surgeon-Lieutenant B. R. Chatterton, to the Officiating Medical Charge of the Regiment. 1st Battalion, 1st Gurkha Rifles: Surgeon-Captain H. Smith, from the Officiating Medical Charge of the 2nd Battalion, 1st Gurkha Rifles, to the Officiating Medical Charge of the Battalion. 2nd Battalion, 1st Gurkha Rifles: Surgeon-Lieutenant G. M. C. Smith, from the Officiating Medical Charge of the 1st Battalion, 1st Gurkha Rifles, to the Officiating Medical Charge of the Battalion. The following appointments have been made to the medical charge of Cantonment General Hospitals: Surgeon-Lieutenant-Colonel A. A. Macrobin, A.M.S., to Kasauli; Surgeon-Major D. Wardrop, A.M.S., to Umballa; Surgeon-Major J. Watson, A.M.S., to Sabathu; Surgeon-Major N Leader, A.M.S., to Jutogh; Surgeon-Captain T. Du B. Whaite, A.M.S, to Dagshai; Surgeon-Captain J. Fayrer, A.M.S., to Solan; Surgeon-Captain G. H. Barefoot, A.M.S., to Barrackpore; Surgeon-Captain H. E. Winter, A.M.S, to Dum-Dum; Surgeon-Captain A. D. C. Scanlan, A.M.S., to Darjeeling. Surgeon-Lieutenant J. P. Morton is brought on to the strength of the Madras Establishment. The services of Surgeon-Lieutenant-Colonel W. A. C. Roe, Civil Surgeon, Sialkot, are placed at the disposal of the Government of India in the Home Department. Surgeon-Major W. Coates, M.D., is appointed Civil Surgeon of Lahore, Superintendent of the Lahore Lunatic Asylum, Professor of Midwifery and Forensic Medicine in the Lahore Medical College and Medical Officer in charge of the Government College, Lahore. Surgeon-Captain A. W. Alcock, Deputy Sanitary Commissioner of Bengal, is appointed to officiate as Superintendent, Indian Museum. Surgeon-Captain W. Yost, M.B., I.M.S., Bengal Establishment, Medical Officer of the Mushkaf-Bolan State Railway, is transferred from the P. W. Department to the Home Department. Surgeon-Captain D. G. Crawford, Civil Surgeon of Saran, is appointed to be Civil Surgeon of Monghyr.

NAVAL MEDICAL SERVICE.

The following appointments are announced:—Surgeons: F. Woore to the *Virid* and E. B. Townsend to the *St. Vincent*,

VOLUNTEER CORPS.

Rifle: 2nd (Earl of Chester's) Volunteer Battalion, the Cheshire Regiment: Surgeon-Major A. Hamilton to be Surgeon-Lieutenant-Colonel (dated June 10th, 1893).—3rd Volunteer Battalion, the Queen's Own (Royal West Kent Regiment): George Lenthal Cheatle, Gent., to be Surgeon-Lieutenant.

MEDICAL OFFICERS IN THE FRENCH ARMY.

An order has been issued by the French Minister for War prohibiting remunerative practice by army medical officers who have hitherto been at liberty to accept payment from civil patients and to practise in competition with civil medical practitioners.

THE LATE DEPUTY-SURGEON-GENERAL A. P. CAHILL, M.D.

Deputy-Surgeon-General A. P. Cahill, who died at Victoria-place, Eastbourne, on the 4th inst., aged seventy-one years, joined the Army in 1846. In August, 1857, he became surgeon, advancing to surgeon-major in 1866, and retiring in 1857, with the rank of deputy-surgeon-general. He served in the Punjab Campaign, 1848–49, and was present at the surrender of the fort and garrison of Chencote and the Battle of Goojerat, for which he obtained the medal and clasp. He also served in the Peshawur campaign of 1852 and with the force under Sir Colin Campbell against the frontier hill tribes. He served in Bengal during the Indian Mutiny of 1857–59, as well as in the campaign in Oude, for which he obtained a medal.

THE SERVICE CLUBS AND MEDICAL OFFICERS.

One of our evening contemporaries refers to the black-balling of army medical officers at the service clubs, states that the process of exclusion is being carried on at all the army clubs, and adds that there is some talk of a general secession on the part of the medical members. If it be true that there is any such systematic blackballing all we can say is that it is an altogether unwarrantable proceeding towards a body of officers and gentlemen.

A PASTEUR INSTITUTE FOR INDIA.

Hydrophobia is not a very uncommon disease in India. When a soldier has been bitten by a rabid animal the Indian Government has generously gone to the expense of sending him from India to Paris for treatment at the Pasteur Institute. A non-commissioned officer belonging to the 11th Hussars was admitted last month into the Station Hospital at Sialkote after having been bitten by a rabid dog and he has been sent to Paris. It would be impossible for the Government to extend the same practice to the enormous native populations of India under like circumstances, and the question arises whether it would not be both practicable and preferable to establish similar institutions in India to which patients could proceed for treatment.

CIVIL SANITATION IN INDIA.

Under the above heading we notice in the Overland Summary of the *Indian Daily News* an article calling attention to the defective organisation of our present system of dealing with the sanitation of India. It has been found impossible in Europe for one department to look after the sanitary interest of both the military and the civil population, and our Indian contemporary points out a number of reforms that are necessary in that country, one of which must, it considers, precede all others—viz., the separation of the civil from the military sanitary organisation. It is impossible for one department to look after the health of the soldiers and of the vast population of the Indian Empire at the same time.

HOSPITAL FOR WOMEN AND CHILDREN IN MADRAS.

The Madras Government has sanctioned the outlay of 80,000 rupees for the erection of a suitable hospital for women and children, and it is proposed to make alterations in the General Hospital at Madras in view of the new building being located there.

CAWNPORE CANTONMENT.

The present sanitary condition of this station is considered to be unsatisfactory and the authorities have ordered an inspection with a view to the establishment of new sanitary arrangements.

LORD ROBERTS AT THE MANSION HOUSE.

The late Commander-in-Chief of India made a lengthy and lucid speech on Indian military affairs and policy at the late entertainment by the Lord Mayor at the Mansion House. Lord Roberts did not directly touch upon the medical services in that country, but he alluded to a subject in the course of his speech about which medical officers who have served in the field in that country hold strong opinions—viz., that the most efficient army is of little use unless it is mobile, and mobility can only be ensured by well-considered arrangements, the practicability of which should be tested in time of peace. Lord Roberts stated that it had been necessary to develop such a system of communication by road and rail as will admit of the rapid concentration of the field army at certain points along the frontier line. A transport train of mules and camels had also been organised, and the requisite stores for speedily equipping the troops have been collected at stations whence they could be drawn in the event of war. All medical officers who took part in the late Afghan campaigns have practically realised, by the laborious exertions they had to make on many occasions then, the essential importance of transport as far as their service is concerned.

THE FRENCH EXPEDITION IN DAHOMEY.

If recent accounts from Dahomey are to be relied upon the position of the French in that country is becoming a very difficult one and the difficulties do not promise to be easily overcome. Behanzin still holds nearly the whole country and he has sufficient force to make himself extremely troublesome to the French troops. The King of Dahomey and his people have the great advantage on their side of being in their own climate, whereas the French are in a climate which is deadly to Europeans and the consequence is that great sickness prevails amongst them. It is stated that some 20 per cent. of the French force have been invalided, which means that reliefs must be sent out to fill their places. Malarious and heat fevers and dysentery mainly constitute the diseases to which Europeans are liable in that climate, especially at certain seasons. The best thing that can be done from a sanitary point of view would be for the French to conclude some treaty arrangement with the Dahomeyans if possible, for any attempt to annex the country would cost too much in life and money. The great sickness among the French troops is to be regretted, for it is very desirable in the interest of humanity that General Dodd's force should be able to exact some terms calculated to bring about an improved condition of affairs in Dahomey.

Correspondence.

"Audi alteram partem."

MEDICAL AID ASSOCIATIONS:

THE DECISION OF THE GENERAL MEDICAL COUNCIL; ITS LOGIC AND ITS LESSON.

To the Editors of THE LANCET.

SIRS,—The long-looked-for decision of the Medical Council on the question of Medical Aid Associations has now been made known. The position taken up by a majority of the Medical Council with regard to the recommendations of the committee it would, I think, "pass the wit of man" to justify. Last November, on the strength of certain charges and allegations contained in a memorial presented to the Council by Dr. Phillips, acting as secretary of the Medical Defence Union, the Council appointed a capable committee, composed of members of its own body, to investigate these charges, the evidence in support of them and any rebutting evidence they might procure, to report their finding to the Council, and, I presume, to propose remedies for such of the alleged faults as might be found to be proved. Now, I think everyone must commend the painstaking and thorough manner in which the committee conducted their inquiry, as evidenced by their report and summary of the evidence, and must also admit the very moderate nature of their remedial proposals. Practically, the committee found that all the more important charges contained in Dr. Phillips's memorial were sustained. They found that the medical officers were often so overworked as to cause them great "disheartenment" and to be unable to bestow on individual cases of severe illness the time and attention needed for intelligent diagnosis and efficient treatment. By this condition of things the interests of certain sick members must have suffered. They found that the position of the medical officer is often one of such dependence that, as acknowledged by some of them, he is afraid to ex-

press his honest opinion on a certificate as to the state of illness or otherwise of certain members who may be malingering; indeed one ex-medical officer had assigned to him, as the reason of his dismissal, that he had refused to grant a certificate of illness to a malingering committeeman. They found that these societies are largely availed of by well-to-do people to obtain medical attendance on terms that should be applicable only to the very poor. In fifty-five out of eighty-four associations a certain proportion of the members could well afford to pay ordinary medical fees, in many cases a third or a half of them could, and in two associations it was stated that *all* the members could afford to do so. They found that profits are made, and, though not universally, in some instances they are accumulated to a very large amount. They found that "touting" for members is directly or indirectly carried on to a considerable extent. For the mitigation of these various abuses the committee proposed certain very mild remedies, and when they asked the Medical Council to approve of those remedies—it seems hardly credible, but it appears to be a fact—the Council decided by fourteen votes to five that to rectify these abuses, or to adopt an attitude or express an opinion that might have the effect of mitigating them, did not come within their "statutory province." Now it is important to bear in mind that last November, when the Council appointed the committee to investigate this matter and to report to them, all these charges were before them, no fresh charges were expected to be made, and one would have thought that this course of action would have been determined by the finding of the committee as to whether the charges then under consideration were true or false. The committee found that substantially all the charges were sustained, and in the face of this the Council declare that to take any cognisance of these matters is outside their "statutory province." Simple-minded people like myself certainly thought that when they decided to investigate the validity of the charges made against medical aid associations they had both the power and the intention to deal with the abuses if found to exist, seeing that from the first every charge was plainly before them and the investigation was not expected to reveal any new faults. But can the Medical Council rightly and justly say that it is outside their proper functions to take cognisance of such practices as have been shown to exist and to take measures to remedy some of the faults that have been demonstrated by the inquiry? I would direct special attention to two features of medical aid work—firstly, that in some instances the medical officer, because of the precarious tenure of his office, is afraid to express his truthful opinion on a certificate if by doing so he is likely to give offence to his masters, the committee—in other words, that some medical officers have confessed that if they wish to retain their appointments in certain exigencies they are obliged to give false certificates. Is it outside the proper duties of the Council to take notice of a system that places any registered medical man in a position where he is virtually driven to do such a thing? I contend it ought not to be and that the existence of this feature alone calls loudly for their interference. Again, over and over the experience has been deposed to by men holding these appointments that they are so overworked that they in many instances cannot bestow on severe cases of illness the time and attention needed to treat them properly. This is at variance with what I conceive to be the traditions and canons by which we should be guided. I contend that the Medical Council should interfere to prevent medical men practising their art under circumstances where they can neither do justice to their own attainments nor to the well-being of their patients.

The future of this question is well worthy of the serious and immediate attention of every general practitioner throughout the kingdom. It is to them a matter of life and death. No one, I think, expected the Council to employ their penal powers in the matter. A simple resolution, formally passed, expressing disapproval of the conduct of medical men who gave their services to any such body whose constitution and rules of conduct were not in conformity with a certain standard, adopted and approved by the Council, would have been sufficient. This simple service, in the interests of the profession at large, to protect the private practitioner from being robbed, the practitioners of medical aid associations from being enslaved and degraded and the public from being demoralised was too much for the Medical Council to perform. We have now only ourselves to look to for help; will it be found that medical men are so indifferent to their own interests and to the future position and status of their profession that they will allow this evil to go on growing and to become more firmly rooted without making a united, a determined and a persevering effort to combat its worst features? There is no other profession, no other trade, under the sun whose members would, for want of organisation and united action, submit to such a great wrong. I confidently hope that the revelations of the past nine months will have the effect of arousing even the most apathetic and of making every man whose name occupies a place on the Medical Register determine that he will quickly and loyally perform his part in correcting this great and growing abuse and in freeing his profession from an incubus that threatens its independence and every other feature that has hitherto made it in any way attractive as a pursuit and renders it one of the least desirable of the callings to which a man of self-respect and intelligence can devote himself, his time and ability.

I neither wish for nor suggest any course of action on the part of the profession in any way inimical to or incompatible with the interests of the friendly societies or those grades of the community whose circumstances render the coöperative system, or some such method implying similar terms, the only one on which they can secure medical treatment. I know that much capital in justification of the establishment of medical aids has been made out of the contention that before their inception so-called club patients received but scant attention and less courtesy at the hands of the club practitioner. That this argument has been used in good faith I do not doubt, but that it is so well founded as those who use it seem to think I do not for a moment believe.

The thanks of the profession at large are due to Dr. Phillips for the effort he has made to have the abuses of this system removed and the serious blot on the dignity of the profession expunged.

I am, Sirs, yours truly,

W. WALTER GIBSON, M.D. R.U.I.

Swan-street, Kidderminster, June 7th, 1893.

*** The length of this communication has compelled us to omit some of the less important parts of it.—ED. L.

To the Editors of THE LANCET.

SIRS,—I desire, as a hospital officer of nearly thirty years' experience, to record my thankfulness that this report has been so emphatically negatived by the General Medical Council. My reasons are easily given if the word "Hospital" is substituted for "Medical Aid Associations" and the result noted. The reporters asked the Council to "record its opinion that a medical practitioner is acting in a reprehensible manner—(1) if he holds a hospital appointment the duties of which are so onerous that he cannot do justice to the sick under his care." Can the junior members of our hospital staffs, who have to see eighty or a hundred out-patients in a morning, do justice to the sick under their care? Do the senior members of many hospital staffs, holding their appointments long after the evidences of nature's failure are quite apparent, do justice to the sick under their care? Or do those members of hospital staffs to whom success has come early, and who content themselves by "going down" once or twice a week, leaving the real responsible work to resident officers, do justice to the sick under their care? "(2) If he consents to give certificates where, in his opinion, they are not justifiable on medical grounds." Who has been a junior officer in a large out-patient department who does not know how loosely certificates are given? "(3) If he accepts or retains employment by a hospital in which touting is used to attract patients." On this last point neither discussion nor illustration is required. The fact is that this agitation against medical aid associations has been badly conceived and has been worked up from one side only. What evils exist in connexion with them can be remedied only by one thing, as Sir Walter Foster's strong common sense pointed out, and that is nothing short of the whole medical profession. As the date of the application of the remedy one may safely give the second decade of the Millennium.

I am, Sirs, yours truly,

June, 1893. MEDICUS.

To the Editors of THE LANCET.

SIRS,—The object of the letter of your correspondent "Verax," published in THE LANCET of last week, appears to be written with the idea of pointing out that partiality had been shown by the committee of the General Medical Council in sending their circular to certain associations only. I must say that I am unable to believe for one moment that this has been the case. Although the chances are small, it is possible that a letter may be lost in transit through the post; yet I fail

to understand how "Verax" will be able to get any member of the medical profession, whether he be for or against these associations, to believe that he or any other medical officer was in ignorance of the inquiries being made by circulars sent out by the committee of the General Medical Council. The fact of the sending out of these circulars was noticed on several occasions in different medical and lay papers in addition to THE LANCET.—I am, Sirs, yours faithfully,

June 13th, 1893. W. H. H.

*** Pressure on our space this week compels us to hold over several letters on the subject with which the above communications deal.—ED. L.

POLICE SURGEONS IN THE UNITED KINGDOM.

To the Editors of THE LANCET.

SIRS,—You permitted me to ask through the columns of THE LANCET (May 27th, 1893) for information as to the position and mode of remuneration of police surgeons throughout the kingdom. The replies I have received have enabled me to construct the following table, which will be found, I hope, of interest to some of your readers even beyond those immediately concerned; they have also shown that there is a desire felt for the formation of a United Kingdom Police Surgeons' Association, and I have agreed to receive the names of police surgeons willing to join, who are asked to enclose a postal order for two shillings and sixpence to defray expenses of printing, postage &c.

Table showing Strength of Police Force, Number of Surgeons, Salaries and Fees of Surgeons in the following places:

Name of Force.	Strength.	No. of Surgeons.	Salary of Surgeons.	Fees for visits to prisoners &c.
Bath	86	1	£50	Nil.
Blackburn	126	1	£160	"
Bolton	119	1	£40	"
Burnley	80	1	£40	"
Brighton	178	1	£100	5*s.* day 7*s.* 6*d.* night
Gateshead	85	1	6*s.* a year per man	3*s.* 6*d.* day 7*s.* 6*d.* night
Gloucester	40	1	£12	—
Halifax	84	1	£34 10*s.*	Nil.
Hastings	62	1	£12	"
Liverpool	1,600	4	£120 to £150	"
Manchester	—	2	£125 each	—
Metropolitan	14,000	Over 150	10*s.* a year for inspectors 6*s.* a year for men	3*s.* 6*d.* day 7*s.* 6*d.* night
Middlesbrough	76	1	£85	—
Newcastle-on-Tyne	—	1	£300 to £400	2*s.* day 5*s.* night
Newport	63	1	£68	—
Northampton	71	1	£50	Nil.
Oldham	132	1	£70	"
Preston	105	1	3*s.* a head	3*s.* 6*d.* day
Reading	76	1	£52 10*s.*	Nil.
Rochdale	73	1	£30	"
St. Helens	74	1	£30	Not fixed
Southampton	80	1	£120	Nil.
Stockport	74	1	£40	3*s.* 6*d.* day 5*s.* night
Walsall	69	1	£30	Nil.
Wigan	62	1	£35	5*s.* a visit
Wolverhampton	82	1	£40	—
York	72	1	£30	Nil.

I think I ought to acknowledge my indebtedness for suggestions and assistance in framing the table to Mr. Lowndes of Liverpool and Mr. Hopkins of Bath, both of whom will, I hope, take an active part in the management of the proposed association. I am, Sirs, yours truly,

Dulwich-grove, S.E., June 10th, 1893. H. NELSON HARDY.

SHELTERS AND LODGING-HOUSES.

To the Editors of THE LANCET.

SIRS,—We English are generally jealous of interference on the part of authorities—and rightly so, too; but I think there should be a limit to freedom of action when the lives of others are thereby at stake. With the existing law the common lodging-houses in London come under the safeguarding control of the Common Lodging-houses Acts, whereas the Salvation Army and other similar semi-religious shelters philanthropically founded with a view of supplying a real need are allowed to escape, since they have been ruled to be outside the definition of the term "common lodging-house." At the first onset—in January—of the present outbreak of small-pox I felt it my duty to point out to the sanitary authority of St. George-the-Martyr, Southwark, and, by their instructions to the Local Government Board, the expediency of the prompt provision of a remedy, by means of legislation, for this anomalous and dangerous state of affairs.

The poor parish of St. George-the-Martyr, Southwark, the most densely populated sanitary area in the whole of London, enjoys the distinction of possessing in its midst the largest Salvation Army shelter, situated in the Blackfriars-road between the Surrey Theatre and Peabody-square-buildings, and capable of accommodating nightly 800 persons, mostly of "the great unwashed" tramp class, in bunks or on benches or upon the floor, at a charge of 3*d.*, 2*d.* and 1*d.* respectively. This shelter, unlike the thirty-five common lodging-houses within the same district, escapes the enforcement by the police of the provisions of the Common Lodging-houses Act, which provides for compulsory registration, inspection by day and by night, cleanliness, ventilation, the number of lodgers authorised to be received in each dormitory, the separation of the sexes, the prohibition of all cellars—whether let or occupied separately or no—as sleeping rooms except they conform to certain stringent rules, and the giving by the keeper of the shelter of immediate notice of any lodger if ill of fever or any infectious or contagious disease to the police, the poor-law medical officer and the relieving officer. Left to its own sweet will, so far as police supervision is concerned, the shelter need only, perforce, open its doors to the officers of the sanitary authority, like any other private dwelling-house—i.e., by day only—thus completely escaping inspection during the more needful hours of occupancy. Of a total of fifty-five cases of small-pox officially notified to me during the present year in St. George's, Southwark, the postal address of the place from which ten of the patients came was given as "Salvation Army Shelter, Blackfriars-road." Of the ten, eight walked through the streets to the out-patient departments of St. Bartholomew's, St. Thomas's, Guy's and Westminster Hospitals and two to the Southwark Union Northern Relief Station, where the disease was recognised and the patients were promptly isolated and despatched to the hospital ships at Dartford. Besides this number I have received numerous intimations from medical officers of health, union officials and others of several cases of small-pox, to say nothing of scarlet fever, the contagion of which was presumably contracted in and spread under the same Salvation Army shelter.

In only two cases of small-pox have I succeeded in definitely locating the patients, they being known to the shelter attendant as lodgers during three and four consecutive weeks respectively. In one of these cases I caused the particular bunk which the patient had occupied to be disinfected. In the other case, on discovering that the patient had slept either on a bench or upon the bare boards, somewhere in the centre of "the penny shelter dormitory," which lodges between 300 and 400 nightly, I recommended that the shelter should be closed for one night after it had been fumigated, so that it should enjoy the oxidising and purifying effect of pure air made available by the free opening of windows and doors during this period. This request, however, was not acceded to by the shelter authorities. Six cases of small-pox have been notified to me as having existed in as many common lodging-houses within the district. Of this number four were detected in the out-patient departments of metropolitan general hospitals and one in the Southwark Union relief station, where they were isolated and from whence the patients were removed as quickly as possible to the hospital ships.

In every case of small-pox occurring in a common lodging-house I have advised the Sergeant-Inspector of Police to have the infected room efficiently purified by means of eight hours' sulphuring, followed by closure, for a period of twenty-four to seventy-two hours and general cleansing. This advice has been gladly carried out by the keepers without exception.

Should cholera visit us, I believe that the tramps using the Blackfriars-road and other similar shelters will prove a real danger with their, at present, unsatisfactory supervision, and I shall not be surprised if they become a principal means of propagating the disease throughout the country. I have occupied at length your valuable space in the hope both of good being the result and of learning the opinion and experience

of those medical officers who are responsible for the remaining 3200 men and women lodgers in the other Salvation Army shelters of London.—I am, Sirs, yours truly,

F. J. WALDO, M.A., M.D. Cantab, D.P.H.,
Medical Officer of Health, St. George, Southwark.

Plowden-buildings, Temple, E.C., June 7th, 1893.

"THE TESTS OF DEATH."

To the Editors of THE LANCET.

SIRS,—About a year ago a leading article appeared in the *Daily Telegraph* in which the writer strongly urged upon the Government the adoption of a law compelling sepulture within twenty-four hours of supposed death. I wrote to the editor calling his attention to the fact that putrefaction was the only certain sign of death and pointed out that the English system of delay for a few days was the only one by which we could be guaranteed against the occurrence of such frightful mistakes as are from time to time recorded by the Paris correspondent of the same journal. My letter was not inserted, but I think you will agree with me that Dr. Haward's case fully bears out my contention. It may interest your readers to learn that there are two tests which, it appears, were not adopted by Sir Benjamin Ward Richardson in the case in question. The first of these is the application of leeches which, it is asserted, cannot draw blood from a dead body, and the second the formation of a blister by heat, which will contain air only if life is extinct and serum if the vital functions are merely suspended.

I am, Sirs, yours faithfully,

Nottingham, June 12th, 1893. CHAS. BELL TAYLOR, M.D.

To the Editors of THE LANCET.

SIRS,—In the report by Dr. E. Haward of nine tests one other is not mentioned which has apparently been of use—viz., the tying a thin string or thread round the root of the nail of one or more fingers. If life is still present the blue discolouration of impeded circulation is soon apparent; if life is over the wax-like colour of the digit remains. I should be glad to know if this test has failed.

I am, Sirs, yours faithfully,

June 12th, 1893. H. F. S.

THYMOL AS AN ANTHELMINTIC IN FILARIASIS.

To the Editors of THE LANCET.

SIRS,—Surgeon-Lieutenant-Colonel E. Lawrie, in THE LANCET of Feb. 14th, 1891, and Nov. 26th, 1892, having stated his belief in the efficacy of thymol as an anthelmintic in cases of filaria sanguinis hominis, and founding that belief on the experience of two cases in which cure was the result, I was induced to give that remedy a full and fair trial in the case of a patient suffering from chyluria who came under my observation in the autumn of last year, and in whose blood the filaria nocturna abounded. My patient began on Dec. 3rd, 1892, to take three grains of the drug in the day, on the 26th it was increased to six grains a day, on Jan. 20th, 1893, to nine grains a day, on Feb. 5th to twelve grains a day, and on Feb. 20th to fifteen grains a day, and this dose was continued till May 12th, a period of twenty-four weeks, and was then discontinued. It did not affect in any way the health or comfort of the patient, except that the chyluria was greatly improved. On examining the blood the parasites were observed to be not quite so abundant, but just as active as before the treament was commenced; apparently they were in nowise affected by the long course of thymol. The result of this treatment accords with that of Dr. Manson, who believes that the "attempt to cure filarial chyluria by the administration of a parasiticide is founded on a misconception of the true pathology of this disease and of the part played by the filariæ in its production"—although chyluria may be greatly benefited and apparently cured by the action of the drug—and that such benefit would be derived from its balsamic properties, which would have an influence on any cystitis connected with chyluria, as well as a topical toxic influence on the lymphatics of the urinary tract, in the same way that copaiba, cubebs &c. might have.—I am, Sirs, yours truly,

CHARLES WILLIAMS,
Senior Surgeon Norfolk and Norwich Hospital.

Norwich, June 9th, 1893.

AFRICAN HÆMOGLOBINURIC FEVER.

To the Editors of THE LANCET.

SIRS,—In the paper on the above subject read by Dr. Patrick Manson before the Epidemiological Society[1] he states that it is "practically confined to tropical Africa (especially the west coast) and America," and that "there was no accurate or authentic record of a single case in or amongst persons returning from any part of Asia." It is, however, fairly common in Assam and, I believe, other malarious parts of India, and is well known to old planters as "jungle fever." In a European community averaging about twenty only, I have myself seen eight cases, five of them fatal, since 1878, and one of those who recovered died some two years afterwards in another district of the same disease. Two men now here tell me they suffered from it in the Duars district of Bengal. Dr. Manson states that it rarely attacks Europeans in Africa during their first year. From my limited experience this rule seems to apply here also. One case (the mildest I have seen) was in a man in his second year of residence, three occurred in the fourth year of residence (with two recoveries), and the other patients had been out eight years or more and all of them succumbed; three, however, were only from four to seven months back from leave to England, which looks as if they had lost their protective acclimatisation by the trip home. As Dr. Manson says, it is frequent in tropical America, and it is certainly not uncommon in India—why, then, call it "African"? If any prefix be necessary would not "tropical" be more accurate? Do the natives of the West Coast of Africa suffer from it? I am in medical charge of some thousands of natives—men, women and children—on the tea estates here, but have never seen a case amongst them, though they suffer from fever, enlarged spleen and other effects of malarial poisoning more than Europeans.—I am, Sirs, yours faithfully,

J. B. RUDDUCK, L.R.C.P. Lond.

Meese, Assam, May 19th, 1893.

"DEATH UNDER CHLOROFORM."

To the Editors of THE LANCET.

SIRS,—In THE LANCET of June 10th Mr. Foy draws attention to two cases in which fatal syncope occurred on the operating table without the use of any anæsthetic, and he thinks this important at a time "when every death under chloroformisation is ascribed to the anæsthetic." The latter statement is to me quite astounding, as it is notorious that many deaths under chloroform are ascribed to anything rather than to the use of the anæsthetic. Thus in a recent case reported in the *Newcastle Chronicle* of the 27th ult. it is stated that the patient was "about to be carried back to the ward, when he fainted and died." (The necropsy showed flabby state of the heart &c.) He died "from failure of the heart, but that was not due to the chloroform. There was a very much smaller quantity of chloroform used than is customary, and he was under it a very short time." A similar case happened recently in this city in which the operator attributed death to the strain of vomiting acting on a fatty heart. Such cases could be multiplied indefinitely. It was a favourite argument of Sir James Simpson that death might frequently be due to some other cause than the chloroform and apparently Mr. Foy leaves us to draw the same inference. It appears to me that this can apply to only a very small number of cases and that the London committee of 1864 showed a much better appreciation of the facts. They stated:[2] "Many of the deaths happened during trivial operations which, without chloroform, are not attended with risk to life." Again, p. 371, speaking of two cases of fatty degeneration of the heart, they say that this may have contributed to the fatal result, but did not alone cause it. With regard to mental emotion, they state that this should be looked upon as a subordinate, not as the principal, occasion of death. If these conclusions were well founded in 1864, it appears to me that the weight of evidence in their favour at the present day is quite overwhelming.

I am, Sirs, yours truly,

Partick, Glasgow, June 12th, 1893. ROBERT KIRK, M.D.

[1] THE LANCET, April 1st, 1893.

[2] Royal Medical and Chirurgical Society's Transactions, 1864, vol. xlvii., p. 339.

METROPOLITAN HOSPITAL SUNDAY FUND, 1893.

THE following are amongst the principal amounts collected in aid of the fund on Sunday last and received at the Mansion House up to the time of going to press on Thursday, the total amount received at that date being £12,000 :—

	£	s.	d.
St. Michael's, Chester-square (per Rev. Canon Fleming, B.D.)	1219	12	3
"Delta" (fifteenth donation)	200	0	0
St. Paul's Cathedral	204	19	3
"F. G. D." (a further)	50	0	0
R. H. Noble, Esq. (a further)	50	0	0
St. Mary's (Parish Church), Stoke Newington	67	16	10
St. Mary's (Old Church), Stoke Newington	29	19	2
Miss Emily Old (a further)	25	0	0
St. Matthew's, Brixton	78	15	7
Curzon Chapel, Mayfair	138	13	2
Lyonsdown Chapel, New Barnet	28	14	4
St. Paul's, Kilburn	44	15	6
St. Margaret's, Lothbury	57	14	11
National Secular Society, Finsbury Branch (per Miss M. A. Robins)	30	4	8
St. Luke's, Redcliffe-square	32	13	10
W. T. Blandford, Esq. (a further)	20	0	0
St. John's, Redhill	43	3	3
Dulwich College Chapel	58	0	0
Park Chapel, Camden Town	30	15	9
All Saints', Upper Norwood	30	5	9
Major Jones (a further)	20	0	0
Finsbury Park Wesleyan Church	27	0	6
Mrs. Tomlinson	20	0	0
Dutch Church, Austin Friars	39	6	6
Chapel Royal, St. James's	56	8	3
St. Mary's Parish Church, Finchley	38	9	11
St. Paul's Presbyterian Church, Westbourne-grove	80	6	7
St. Nicholas's, Chislehurst (including £100 usual contribution from Richard Foster, Esq.)	254	1	7
St. Andrew's, Leytonstone	40	4	0
Finsbury Park Congregational Church	40	2	6
All Saints', Harrow Weald	20	9	0
Christ Church, St. Marylebone	39	13	1
Islington Presbyterian Church	28	7	3
Unity Unitarian Church, Islington	20	13	6
St. Stephen's, Canonbury	22	0	3
St. Giles' Parish Church, Camberwell	57	1	9
St. Saviour's, Clapham	33	2	10
Holy Trinity, Tulse Hill	101	3	6
Henry Druce, Esq. (a further)	20	0	0
Box outside Mansion House	14	19	6
Westminster Abbey	206	2	2
J. G. A. Baird, Esq. (a further)	50	0	0
Lyndhurst-road Congregational Church, Hampstead	55	0	0
St. Mary's, Brookfield, Highgate	27	0	9
Christ's Church, Wanstead	32	3	3
Malden (Surrey) Parish Church	33	6	4
St. German's, Blackheath	48	1	2
St. Luke's (Parish Church), Chelsea	53	18	0
B. C. N. F. J. (a further)	55	0	0
Christ Church, Hornsey	64	14	4
St. Giles's-in-the-Fields Parish Church	27	0	0
St. James's, Garlickhithe	26	0	0
Christ's Church, Southgate	38	8	6
St. Thomas's, Portman-square	115	12	7
St. Peter's, Norbiton	23	8	0
St. Philip's, Sydenham	26	13	4
Collected on board the R.T.Y.C. steamer *Oriole* (per the Rear Commodore, Robert Hewett, Esq.)	30	0	0
Holy Trinity, Lee	30	17	0
St. Mary's and St. Clement's, Great Ilford	29	5	1
C. H. Hawkins, Esq. (a further)	21	0	0
Holy Trinity, Kilburn	36	18	10
Abney Congregational Church, Stoke Newington	20	2	7
East London Branch, Christian Evidence Society	26	3	6
West Wickham Parish Church	37	9	0
J. J. Randolph, Esq. (a further)	20	0	0
St. Stephen's, Hampstead	34	16	1
Peek, Frean and Co. (a further)	25	0	0
Eltham Parish Church, Kent	28	12	1
St. Andrew's, Thornhill-square	24	0	10
St. Mary Magdalene, Enfield	28	1	7
Wandsworth Wesleyan Circuit	24	1	9
St. James's, West Hampstead	255	1	11
St. Philip's, Regent-street	21	3	3
St. Mary Magdalene, Peckham	30	14	10
Westbourne Park Baptist Chapel	35	13	3
All Saints, Friern Barnet	36	10	2
Metropolitan Tabernacle	142	2	9
St. Peter's, Southwark	20	0	8
St. Cuthbert's, West Hampstead	20	13	3
St. Jude's, Herne-hill	78	7	0
St. Saviour's, Ealing	34	14	9
St. Margaret's, Westminster	95	9	0
St. Saviour's, Southwark	21	11	0
St. Augustine's, Honor Oak	27	7	2
Hampstead Parish Church	56	6	8
St. Saviour's, Pimlico	60	9	9
Effra-road Unitarian Church, Brixton	89	14	6
St. Paul's, Ball's-pond	34	12	4
Elstree, Herts, Parish Church	21	2	0
Barnet (Chipping) Church and Missions	47	0	1
St. Matthew's, Denmark-hill	102	5	5
St. Saviour's, Denmark Park	30	6	10
St. James's, Hatcham	43	4	1
St. Mary Magdalene, Munster-square	25	15	8
St. Paul's, Forest-hill	102	0	0
Fulham Parish Church	33	18	10
St. George's, Bickley	58	14	4
St. Sophia Greek Church, Bayswater	100	5	4
St. Paul's (with St. Mark), Hammersmith	36	11	1
St. Mary's, Spring Grove, Isleworth	25	3	6
Mitcham Parish Church	33	10	0
St. Matthew's, Bayswater	124	14	4
Church of the Annunciation, Chislehurst	43	9	9
St. James's, Camberwell	32	5	2
Bromley, Kent, Wesleyan Chapel	20	16	0
Christ Church, Reformed Episcopal Church, Harlesden	36	5	0
St. John's Presbyterian Church, Forest Hill	70	0	0
St. Philip's, Buckingham Palace-road	22	0	0
St. Marylebone Presbyterian Church	91	10	0
St. John's, Upper Norwood	39	11	0
Woodford Parish Church	21	10	8
St. Michael's (Parish Church), Highgate	78	11	9
St. Paul's, Wimbledon-park	54	0	0
St. John Evangelist, Stanmore	27	8	8
St. James's, Kidbrook	140	18	7
Thames Ditton Parish Church	22	3	3
Hayes, Kent, Parish Church	23	12	7
Roehampton Parish Church	38	1	4
St. Luke's, West Holloway	45	7	6
St. Mary's, Stamford Brook	20	0	4
St. Andrew's, Holborn	21	18	0
Aldenham Parish Church	46	12	0
Highgate Wesleyan Circuit	36	2	11
Crosby Lockwood, Esq. (a further)	25	0	0
St. John Presbyterian Church, Kensington	92	0	0
Chislehurst Wesleyan Chapel	29	3	8
St. Paul's, East Mouisey	22	1	8
Beckenham Parish Church	57	2	1
Bromley, Kent, Parish Church	55	18	7
Reid's Brewery Company (a further)	200	0	0

Other amounts have been received and will be published in our next issue.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

The Port Sanitary Medical Officer.

AT the last meeting of the City Council, held on the 7th inst., Dr. Edward William Hope, assistant medical officer of health for the city and port of Liverpool, was elected temporarily port sanitary medical officer at a salary of £100 per annum in addition to his present salary, *vice* Dr. J. Stopford Taylor, who has resigned this part of his duties. The appointment will give great satisfaction, Dr. Hope being deservedly popular with his professional brethren, with the members of the health committee and with all with whom he has to deal. He was acting as port sanitary medical officer last year during the temporary absence of Dr. Taylor when cholera made its appearance in Liverpool, and it was largely due to his able management that the dread disease was promptly diagnosed, isolated and prevented from spreading. Dr. Hope is lecturer on public health at the Liverpool University College and examiner on the same subject in the Victoria University. He is also the author of numerous contributions relating to public health and kindred subjects in THE LANCET and other medical papers. In appointing him the City Council have not only done justice to an official who has served them faithfully and zealously for some years, but they have also consulted the best interests of the city, and it is greatly to be desired that the appointment may be permanent.

The Liverpool School of Medicine.

The various classes of the medical faculty of the Liverpool University College are well attended, the students paying much attention to the various subjects of study. The summer anatomical class is a large one, dissecting proceeds diligently, and, notwithstanding the great heat, so well are the injecting and preservative processes carried out that the anatomical rooms are perfectly healthy. The Mersey Railway enables students so minded to reside in the bracing air of the Cheshire side of the river, a very short journey bringing them within easy reach of the school.

Suicides: Can they be Prevented or Reduced in Frequency?

A gentleman committed suicide in one of the local parks by swallowing carbolic acid and within a few days his example was followed by another in the same park and by the same poison. In the first victim death had taken place before the body was found, whilst in the second case the unfortunate man lived for some time in great agony, notwithstanding prompt ambulance and medical assistance. That such a poison as carbolic acid should continue to be used for suicidal purposes would be surprising were it not for the fact that cheapness and facility of purchase are factors in promoting the sale of any poison. It is more marvellous and more lamentable that, seeing the many fatalities, suicidal and accidental, which have followed the use of this most useful though deadly substance, steps have not been taken to limit its sale as far as possible to legitimate uses. Suicides by other methods than poison are unhappily frequent, and as it cannot be doubted that a verdict of "felo de se" has a deterrent effect it becomes a grave question whether coroners' juries ought not to return this verdict in cases where the evidence of insanity is conspicuous by its absence.

The Water-supply of Liverpool.

The inhabitants of this city are to be congratulated on the completion of their new water-supply before the present drought. For three months there has been a most remarkable absence of rain, and under the old *régime* there would have been the reduction of the constant service to one of twelve hours and even less each day. The discomfort and danger of such a condition of things need no comment, and the good effects of a constant supply of pure water upon the inhabitants of a city must be obvious.

June 13th.

NORTHERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENT.)

Dangers of Bovine Tuberculosis.

DR. GOURLEY, medical officer of health of West Hartlepool borough, in his last report refers very pointedly to the danger to public health from tuberculosis in animals. He says that he had to condemn five carcases of cows for extensive and acute tuberculosis. Dr. Gourley says further that this is a very serious matter for the butchers, who in these cases had bought the animals at a fair market price and slaughtered and dressed them in an open manner, and when they were condemned for the public benefit the butchers had to bear the entire loss. Dr. Gourley thinks that it would be only fair if such cases were scheduled and compensated as in swine fever, pleuro-pneumonia &c. All these animals had no doubt been milked, he said, whilst suffering from this disease, consequently it is impossible to estimate what injury they may have caused.

Epidemic Measles in the North.

Although the number of fresh cases at Brampton has considerably fallen and its severity has diminished, three more deaths occurred last week. In Newcastle and Gateshead the epidemic has also been severe. Many deaths have taken place from the concomitants and sequelæ of which bronchopneumonia has been the most frequent. The Saltburn local board has decided to add measles to the list of diseases to be notified and thus so far it has placed itself in advance of Newcastle, where over 100 deaths were attributed to the disease last year.

Carlisle Hospital Sunday Fund.

An influential meeting has been held at Carlisle, at which the mayor presided and delegates attended from twenty-seven large factories, departments of railway work &c. The object was to organise the workmen's Saturday contributions and to make better collections than heretofore from workmen.

Scarcity of Water at Sedbergh.

The scarcity of water at Sedbergh has been such that the supply is said to be only available for four hours out of the twenty-four. Although the drought is exceptional, the reservoirs of the place are defective and inadequate. At the well-known grammar school the inconvenience has been so much felt that it was contemplated to send the boys home.

The Tyne Port and Cholera.

The probability of the advent of cholera was the subject of a discussion at the late meeting of the Tyne port sanitary authority. It was stated that the Corporation of Newcastle was going on with its precautions notwithstanding the assurance from several quarters that we were unlikely to have a visitation. It was urged that any vessels coming to the Tyne that had been engaged in carrying pilgrims to Genoa or Mecca should be rigidly inspected. A good many north-country vessels, it appears, had been engaged in that trade, but the medical officer of the port assured the authority that all such vessels received a most thorough examination.

Presentation to Dr. McBean.

Dr. McBean has received a handsome presentation in connexion with the Willington and Wallsend Ambulance Association.

Newcastle-on-Tyne, June 12th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENT.)

The Edinburgh Medico-Chirurgical Society.

AT the meeting of this Society held last week several patients of interest were shown. Dr. Finlay showed a young man who had ruptured a kidney from a fall and in whom recovery had taken place after lumbar incision and drainage. Dr. James Carmichael exhibited a child with dextro-cardia, in whom, however, there was no evidence of transposition of other viscera. Dr. Byrom Bramwell showed photographs of a woman with diffuse psoriasis, and also produced the patient completely cured by thyroid feeding; he mentioned that in some cases of psoriasis the treatment failed. Dr. Alexis Thomson showed a male patient with a very marked arthropathy of the right shoulder, the upper extremity of the humerus being about four inches from the glenoid cavity. He considered the condition as spinal and probably due to syringomyelia. Professor Struthers exhibited a large number of specimens of the appendix vermiformis, illustrating its varying shape, size and situation. Mr. C. W. Cathcart showed a case of minor operation instruments, in which he had introduced a new and simple method of fixing the knife blade into the handle. The papers read were, firstly,

one by Dr. Templeman of Dundee on "Strangulation and Hanging," in which he gave the results of a somewhat considerable experience of these in medico-legal work. Mr. Caird gave "Notes on a Case of Gastrotomy," in which the operation had been done by means of local anæsthesia with cocaine. Dr. Robert Fleming read "Some Notes on a Case of Cancrum Oris," in which he reviewed the literature and the views held regarding the etiology of the disease and indicated his adhesion to the bacterial view. Mr. C. W. Cathcart gave a "Note on the Quenching of Thirst after Abdominal Operations," in which he advocated rectal injections of water, his experience being that it was a most efficacious measure.

Inspection of Meat in Edinburgh.

At a recent meeting of the Market and Public Health Committee of the Edinburgh Town Council a recommendation was carried in favour of establishing a compulsory clearing-house for the inspection of dead meat and of steps being taken to obtain the necessary Parliamentary powers for the purpose. This came before the Town Council at their meeting to-day, and after considerable discussion the matter was referred back to the committee, who were requested to report at length on the whole subject.

Small-pox in Edinburgh.

At the meeting of the Town Council to-day it was intimated that there were 13 cases of small-pox in hospital, but that no fresh cases had occurred for three weeks. There were 89 cases of scarlet fever in hospital, and the cases were on the increase.

June 13th.

IRELAND.

(FROM OUR OWN CORRESPONDENT.)

Royal College of Surgeons in Ireland.

FROM the fiftieth annual report of the council of the Royal College of Surgeons in Ireland, recently issued, it appears that during the year ending April 5th last twelve candidates were admitted Fellows, eighty-five received the Letters Testimonial, having passed the conjoint examination with the Royal College of Physicians, seven obtained the licence in dental surgery and five the diploma in State medicine. The Fellows last March adopted resolutions against the Home Rule Bill on the plea that if passed it would be injurious to the finances of the College and to the interests of its Fellows and licentiates. In the same month the council adopted a resolution expressing the opinion that it is injurious to the interests of the conjoint scheme between the Colleges that examiners for the diploma of the College should also be examiners for other licensing bodies in Ireland which are at the same time teaching institutions. During the year a memorial was addressed to the Lords of the Treasury asking that the College, as an institution engaged in technical education in Ireland, should be granted a share in the fund set aside for the encouragement of such education. The Lords of the Treasury refused the application. A large amount of the time of the council was occupied in relation to the examiners for competitive examinations for the Army and Navy Medical Services appointed by the Secretary of State for War, and a memorial was sent by the council, who submitted that the granting of a monopoly of public competitive examinations to any educational or qualifying body was altogether without precedent and necessarily inflicted great injustice upon other similar bodies, inasmuch as it had the effect of diverting from them students who proposed to compete for such appointments, who would naturally be led to seek instruction at institutions with which the examiners who were subsequently to test them were connected, in order that they might thus acquire familiarity with the practice and professional opinions of such examiners. In April last the President of the College resigned the Chair of Surgery in the school of the College.

Royal Medical Benevolent Fund Society of Ireland.

The annual meeting was held last week, being presided over by the President of the Royal College of Surgeons in Ireland. The report gives expression to the disappointment felt by the committee that the provinces, which naturally supply the majority of applications for the Society's aid, do not render it as much assistance as it is reasonable to expect. Five counties gave no assistance during the year. In commemoration of the jubilee year of the Society, the committee recommend an addition of 10 per cent. to the amounts of the regular grants. The expenses of management, including £36 for law expenses, amounted to £159 9*s.* 8*d.*, or 8·5 per cent. of the receipts, which appear to have been higher than might have been expected.

Cork Water-supply: Pollution of the River Lee.

Cork is supplied by the River Lee and one of its tributaries is the Sullane, which runs through the town of Macroom. Some time ago the Cork corporation drew the attention of the Local Government Board to the injurious influence which the existing system of sewage disposal at Macroom was calculated to exercise upon the Cork urban water-supply. Recently the Board sent their engineering inspector, Mr. Smyth, and Dr. Brown, medical inspector, to examine into the matter. Mr. Smyth, in his report to the Public Health Committee, makes some startling statements as to the drainage of the eastern side of Macroom and the consequent pollution of the Sullane, which flows into the Lee. He states that the portion of the town at the extreme east, comprising a street of one-storeyed houses, is not drained, there being a surface channel to carry off the rain water, and into which the refuse of the houses is thrown. The contents of this open channel are discharged into the river. None of the houses in this street have water-closets. Castle-street comprises about twenty houses, having a population of about 120; there are about six closets in use, and a few disused in houses without water-closets. The slops and excrement are thrown into traps and are discharged into drains which communicate directly with the river. The school-house, containing two water-closets, in like manner also discharges its refuse into the river, which is thereby polluted. With these exceptions the general system of drainage is fairly good, flushing tanks being provided. The subsoil, being composed of sand and gravel, is well adapted for irrigation purposes and, the town being situated so high above the river, the sewage is fully filtered before it could possibly reach the latter. Mr. Donovan, medical superintendent officer of health for Cork, was present at this meeting and stated that, besides what Mr. Smyth had reported, there was an overflow from the sewage tank that went directly into the river from Neville's Inch, which was blocked with sewage. It was decided by the committee that the report of Mr. Smyth should be supplemented by a report from Mr. Donovan and sent to the Local Government Board.

Royal University of Ireland Union.

A provisional committee has been appointed by the graduates of the Royal University and of the late Queen's University to make inquiries with a view to the establishment of the proposed union. It is stated that the Standing Committee of the University have indicated a willingness to provide premises for the proposed reading-rooms, literary meetings &c., but they do not appear to be inclined to permit lady graduates to participate in the privileges of the union.

Professor Antony Roche, Lecturer on Medical Jurisprudence and Hygiene in the Medical School of the Catholic University, has been elected a member of the Society of Public Analysts of Great Britain.

June 13th.

Obituary.

PROFESSOR PETER OF PARIS.

(FROM OUR PARIS CORRESPONDENT.)

DEATH has been active during the year at the Paris Faculty of Medicine. To the names of Professors Hardy and Ball, who have disappeared from our midst, there must now be added that of Professor Peter, who expired at his residence in the Rue de Hambourg on Thursday last, at 5.30 P.M., in the presence of his wife, his two children and a few faithful friends and *confrères*. For some time past the effects of the incessant work demanded by his perhaps too active brain had become apparent and his condition inspired his family with grave anxieties. The immediate cause of death was pulmonary congestion, which proved fatal after a few days' illness, despite the efforts made by his devoted friend, Professor Dieulafoy. Charles Félix Michel Peter was a Parisian *pur-sang*, having been born in that city on Nov. 5th, 1824. He was ever proud to confess his humble origin and the hard struggle he had had to wage in order to raise himself from the humble position of printer's reader to that of Professor of Clinical Medicine at the Faculty of

Medicine. The young workman, who had always had a hankering for a medical career, succeeded by dint of indomitable energy and pluck in preparing himself almost single-handed for, and passing, the preliminary examinations exacted of all candidates for admission on the student *rôle* of the Faculty. In 1854, being then thirty years old, he was an *interne des hôpitaux*; in 1863 he was classed No. 1 in the competitive examination for the position of *chef de clinique de la faculté*. Three years later he was—always, be it understood, by competition—appointed *professeur-agrégé* and in the same year *médecin des hôpitaux*. In 1877 he became Professor of Internal Medicine, and in the following year the Académie de Médecine opened to him its portals as one of the thirteen members of the *Section de Pathologie Médicale*. For some years he has filled the chair of Clinical Medicine at the Hôpital Necker, his place at the Faculty having been taken by Professor Dieulafoy. If it be asked what the late Dr. Peter has contributed to the advancement of the art he loved so well we may at once say that his chief claim to our gratitude lies in the fact that he brought out (in 1872) a splendidly revised edition (the third) of his master Trousseau's *magnum opus*, "Clinique Médicale de l'Hôtel-Dieu de Paris." Whilst that grand work continues to be read Professor Peter's name will survive. He was indeed, and continued until the end to be, an ardent admirer and follower of the methods and way of thinking of the great clinician of the Hôtel-Dieu. He would frequently deliver a lecture in favour of therapeutical measures now perhaps too neglected—viz., bleeding, blistering, the cautery, purging &c. It may be said that his teaching in later years was a perpetual protest against what he considered to be new-fangled modes of treatment of disease, founded, according to him, on unproved hypotheses. Who does not remember his fierce diatribes against Pasteurian ideas at the Académie de Médecine? Never once did he swerve from his antagonistic attitude with regard to the treatment of hydrophobia pursued at the Pasteur Institute. I well remember a lecture delivered by him some years ago at the Necker Hospital, wherein, referring to Admiral Jurien de la Gravière's advocacy of Dr. Pasteur's anti-rabic method at the Académie de Sciences, he sarcastically remarked that medicine had indeed fallen from its high estate when geographers and scientists who *could* know nothing of disease as seen at the bedside presumed to pronounce on such technical questions. The fact is, he entertained an instinctive dislike to outsiders who had the pretention to come between the patient and the clinician. One day at the Academy of Medicine he concluded his anti-Pasteurian harangue with these words: "Quand je mourrai on mettra sur ma tombe, 'Ci-gît celui qui combattit la chimiâtrie,'" his illustrious adversary being in his eyes only a *chimiâtre*. Professor Peter had a wonderful command of idiomatic French and he rightly enjoyed the reputation of being the wittiest of all the professorial bench. Like most Frenchmen he delighted in inventing telling similes. *Rouille de la vie*—the rust of life—that is what he used to call atheroma. *On a l'âge de ses artères*—this was another truism he was wont to utter. At the bedside he was amiability itself, and his quips and goodness of heart, together with his sterling teaching qualities, combined to render him perhaps the most popular of all his colleagues at the Faculty. The rest of his publications had reference to his favourite studies and related to cardiac complications of pregnancy, angina pectoris, diseases of the larynx and of the heart and to diphtheria. He was an advocate of the taking of surface temperatures, asserting *inter alia* that a higher temperature on a pleuritic side as compared with the other denoted purulent effusion. Professor Peter enjoyed the distinction of being physically the smallest of the professors of the Paris school. Last year he presided at the annual banquet of the Continental Anglo-American Medical Society. I remember how pleased he was when I told him that I had sent to THE LANCET an account of a visit I had just paid to his cholera wards at the Necker Hospital. He asked me to send him a number, which I did. In Professor Peter medicine loses a master, a most lucid exponent, and a brilliant representative of methods and principles which are now fast going out of fashion. His death creates a blank at the old Faculty, for none of the surviving teachers can compare with him in wit and clearness and none can excel him in the *bonhomie* that endeared him to generations of students, many of whom are now scattered over the face of the earth. The funeral service took place at noon on Monday, the 12th inst., at the church of St. Louis d'Antan, the remains being afterwards removed for interment to Versailles. *Au revoir! cher et vénéré maître et ami.*

ROYAL COLLEGE OF PHYSICIANS.

AN extraordinary comitia of the Fellows was held on the 15th inst., Sir Andrew Clark, Bart., President, in the chair.

On the close of certain proceedings arising out of a report from the Censors' Board, the President, Senior Censor and Second Censor were nominated to act with representatives of the College of Surgeons on a committee to carry out the provisions of the will of the late Miss M. S. Johnstone of Bath, who bequeathed the sum of £5000 to found certain scholarships for medical students.

A report on an outbreak of small-pox in Mauritius was received from the Colonial Office.

On the recommendation of the committee of management the University College of South Wales, Cardiff, and St. Paul's School, West Kensington, were placed on the list of institutions recognised for instruction in chemistry and biology. The Liverpool Eye and Ear Infirmary was also recognised as an ophthalmic hospital, under the conditions of Clause 11, Paragraph 2, Section 1 of the New Regulations.

Medical News.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—The following gentlemen, having passed the necessary examinations and having conformed to the by-laws and regulations, were at the ordinary meeting of the Council on the 8th inst. admitted Fellows of the College:—

Roughton Walter, L.R.C.P. Lond., D.P.H. Eng., St. Bartholomew's Hospital; date of membership, July 23rd, 1875.
Smith, Ferdinand Clarence (Surgeon-Major, Indian Medical Service), L.R.C.P.Lond., L.S.A., University College Hospitals; April 24th, 1877.
Whitelock, Richard Henry Anglin, M.B., C.M. Edin., Glasgow and Edinburgh Universities; July 22nd, 1884.
Walker, Cyril Hutchinson, M.B., B.A.Cantab., Cambridge University and London Hospital; April 26th, 1888.
Powell, William Wyndham, L.R.C.P.Lond., Westminster Hospital; Aug. 2nd, 1888.
Firth, John Lacy, M.D., L.R.C.P.Lond., Owens College, Manchester, and University and King's College Hospitals; Nov. 8th, 1888.
Fripp, Alfred Downing, M.B., B.S., L.R.C.P.Lond., Guy's Hospital; Feb. 12th, 1889.
Baker, Charles Ernest, M.B., B.C. Cantab., L.R.C.P.Lond., Cambridge University and St. Bartholomew's Hospital; May 9th, 1889.
Griffiths, Cornelius Albert, L.R.C.P.Lond., General Hospital, Bristol, and St. Bartholomew's Hospital; May 9th, 1889.
Marshall, Charles Frederic, M.D., Ch.B.Victoria, L.S.A., Owens College, Manchester, and St. Bartholomew's Hospital; May 9th, 1889.
Musgrove, James, M.D.Edin., Edinburgh University; May 9th, 1889.
Sequeira, James Harry, M.D., L.R.C.P.Lond., London Hospital; May 9th, 1889.
Lack, Harry Lambert, M.B., L.R.C.P.Lond., King's College Hospital; Feb. 13th, 1890.
Box, C. R., M.B., L.R.C.P.Lond., St. Mary's Hospital; May 14th, 1891.
Johnson, F., L.R.C.P.Lond., St. Bart.'s Hospital; May 14th, 1891.
Lawson, Arnold, M.D.Brux., L.R.C.P.Lond., Middlesex Hospital; May 14th, 1891.
Banks, A., L.R.C.P.Lond., St. Thomas's Hospital; July 30th, 1891.
Michels, Ernst, M.D.Berlin, L.R.C.P. Lond., Berlin University; July 30th, 1891.
Fisher, J. H., L.R.C.P.Lond., St. Thomas's Hospital; Nov. 12th, 1891.
Montgomery, William Percy, L.R.C.P.Lond., Owens College and Royal Infirmary, Manchester; Nov. 12th, 1891.
Wallace, C. S., L.R.C.P.Lond., St. Thomas's Hospital; Nov. 12th, 1891.
Burden, H., L.R.C.P.Lond., St. Thomas's Hospital; Feb. 11th, 1892.
Hepburn, Malcolm Langton, M.B., L.R.C.P.Lond., St. Bartholomew's Hospital; August 1st, 1892.

Five other candidates passed the examination, but not having attained the legal age (twenty-five years) are not yet entitled to the diploma, and fourteen were referred.

The following gentleman was at the same meeting admitted a Member of the College:—

Harriss, Stanley Arthur, L.R.C.P.Lond., Sheffield, Edinburgh, Charing-cross and Westminster Hospitals.

The following gentlemen having passed the necessary examinations were admitted Licentiates in Dental Surgery:—

Austen, Leslie Gilmore, Charing-cross and Dental Hospitals.
Bates, Herbert Astley, Mason's College and Dental Hospital, Birmingham.
Beverley, Edgar Adolph, Charing-cross and National Dental Hospitals.
Butler, William Reginald, Guy's Hospital, Dental Department.
Fairbrother, Aubrey Harry Burne, Charing-cross and Dental Hospitals.
Gillett, Richard William, Charing-cross and Dental Hospitals.
Hall, Edward Caleb Joseph, Charing-cross and Dental Hospitals.
Ham, Hadley Herefoot, Charing-cross and Dental Hospitals.
Hope, Vacey Linnington, Charing-cross and Dental Hospitals.
Keay, Colin, Guy's Hospital, Dental Department.
Lukyn, Herbert Edward, Charing-cross and Dental Hospitals.

Lyne, William Henry, Guy's Hospital, Dental Department.
Makepeace, Alfred Joseph, Guy's Hospital, Dental Department.
Manton, G. Sidney Frederick, Guy's Hospital, Dental Department.
Morgan, Frederick John, Guy's Hospital and Dental Hospital.
Morley, Frank, St. George's and Dental Hospitals.
Oram, Charles Henry, Guy's Hospital, Dental Department.
Pritchard, Francis Edwin, Guy's Hospital, Dental Department.
Saul, William Henry, Guy's Hospital, Dental Department.
Simmons, Thomas Pybus, Charing-cross and Dental Hospitals.
Tomlinson, John William, Charing-cross and Dental Hospitals.

Twenty-one candidates were referred back to their studies for six months and one for twelve months.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—At the ordinary meeting of the Council on Thursday, the 8th inst., the following gentlemen were elected examiners for the ensuing collegiate year, viz :—*First examination, Membership*—Elementary Anatomy: Messrs. J. Stanley Newton Boyd, M.B. and B.S. Lond., F.R.C.S. Eng., Charing-cross Hospital; Louis Albert Dunn, M.B. and M.S. Lond., F.R.C.S. Eng., Guy's Hospital; William Frederick Haslam, F.R.C.S. Eng., Mason's College, Birmingham; James Ernest Lane, F.R.C.S. Eng., St. Mary's Hospital; Bilton Pollard, M.D. Lond., F.R.C.S. Eng., University College. Elementary Physiology: Mr. John Rose Bradford, M.D. Lond., M.R.C.S. Eng., University College. Elementary Biology: Messrs. Henry Percy Dean, M.B., B.S. Lond., F.R.C.S. Eng., London Hospital; and Thomas William Shore, M.D. Lond., M.R.C.S. Eng., St. Bartholomew's Hospital. *Second examination*—Anatomy: Messrs. William Anderson, F.R.C.S. Eng., St. Thomas's Hospital; Richard Clement Lucas, M.B. and B.S. Lond., F.R.C.S. Eng., Guy's Hospital; George Dancer Thane, M.R.C.S. Eng., University College; Alfred Harry Young, F.R.C.S. Eng., Owens College, Manchester. Physiology: Messrs. William Dobinson Halliburton, M.D., M.R.C.P. Lond., M.R.C.S. Eng., King's College; Vincent Dormer Harris, M.D., F.R.C.P. Lond., M.R.C.S. Eng., St. Bartholomew's Hospital; and D'Arcy Power, M.B. Oxon., F.R.C.S. Eng., St. Bartholomew's Hospital. *Third examination*—Midwifery: Messrs. William Duncan, M.D. Brussels, M.R.C.P. Lond., F.R.C.S. Eng., Middlesex Hospital; Montagu Handfield-Jones, M.D., M.R.C.P. Lond., M.R.C.S. Eng., St. Mary's Hospital; George Ernest Herman, M.B., F.R.C.P. Lond., F.R.C.S. Eng., London Hospital; and Peter Horrocks, M.D., F.R.C.P. Lond., M.R.C.S. Eng., Guy's Hospital. *First examination, Fellowship*—Anatomy: Messrs. William Bruce Clarke, M.B. Oxon., F.R.C.S. Eng., St. Bartholomew's Hospital; Alfred Pearce Gould, M.B., M.S. Lond., F.R.C.S. Eng., Middlesex Hospital; Walter H. A. Jacobson, M.B., M.Ch. Oxon., F.R.C.S. Eng., Guy's Hospital; and George Henry Makins, F.R.C.S. Eng., St. Thomas's Hospital. Physiology: Messrs. John Barlow, M.D., C.M. Ed., F.R.C.S. Eng., St. Mungo's College, Glasgow; Cuthbert H. Golding-Bird, M.D. Lond., F.R.C.S. Eng., Guy's Hospital; Benjamin Thompson Lowne, F.R.C.S. Eng., Middlesex Hospital; and William Stirling, M.D., C.M. Edin., Owens College, Manchester. *Diploma of Public Health*—Part I.: Mr. George Turner, M.B., D.P.H. Cantab., L.R.C.P. Lond., M.R.C.S. Eng., Guy's Hospital. Part II.: Sir George Buchanan, M.D., B.A., F.R.C.P. Lond., London Fever Hospital.

UNIVERSITY COLLEGE, LONDON.—Faculty of Medicine (Winter Session, 1892-93): *Medical Entrance Exhibitions:* £100, C. Bolton (Whitby); £60, W. R. Battye (Bristol); £40, E. P. Chennells (Boxmoor). *Atchison Scholarship:* £60 per annum for two years, J. Le M. Bunch (London). *Cluff Memorial Prize:* £15, T. H. C. Stevenson (Strabane). *Physiology* (Professor E. A. Schäfer, F.R.S., Dean): Gold Medal, J. Shardlow (Clay Cross); Silver Medals, D. N. Nabarro (London); C. Bolton (Whitby). *Pathology* (Professor V. A. H. Horsley, M.B., B.S., F.R.S., Vice-Dean): Tuke Silver Medal, J. S. Bolton (Whitby); Tuke Bronze Medal, E. E. Murray (Jamaica). *Anatomy* (Professor G. D. Thane, Sub-Dean): Gold Medal, J. D. Russell (Greenwich); Silver Medals, H. B. Shaw (Sydney), T. R. H. Bucknall (Kidderminster), C. Bolton (Whitby). *Medicine* (Professor H. Charlton Bastian, M.D., F.R.S.): Gold Medal, J. Le M. Bunch (London); Silver Medals, T. B. Stedman (Leighton Buzzard), E. J. Smyth (New Barnet). *Surgery* (Professor Marcus Beck, M.S., M.B.): Gold Medal, J. Le M. Bunch (London); Silver Medals, P. S. Eves (London), E. J. Smyth (New Barnet). *Clinical Medicine* (Professor Sydney Ringer, M.D., F.R.S.): Fellowes Gold Medal, F. T. Travers (London); Fellowes Silver Medals, J. Le M. Bunch (London), E. F. Harwood (Lisbon), P. J. Edmunds (London). *Clinical Dental Surgery* (S. J. Hutchinson, Esq., M.R.C.S.): Silver Medals, J. Le M. Bunch (London), W. H. B. Stoddart (Woolwich).

ON page 1399 of THE LANCET of June 10th the name of a firm was given as "Rivington, Percival and Co." We are asked to state that the firm of Messrs. Percival and Co. will become Rivington, Percival and Co. on July 1st next, but until that date their style remains Percival and Co.

THE ST. THOMAS'S AND GUY'S HOSPITALS CLUB CUP.—The members of the St. Thomas's and Guy's Hospitals have just presented to their mutual club a very handsome solid silver loving cup. It has three handles, a cover, and stands upon three claw feet. On two panels between the handles are depicted in relief faithful views of St. Thomas's and Guy's Hospitals, whilst on the third side are engraved facsimile signatures of the subscribing members. The cup stands on an ebony base, on the sides of which are richly carved replicas of the arms of the two hospitals and a silver plate bearing the inscription: "St. Thomas's and Guy's Hospital Club; founded Feb. 14th, 1882. Cup presented by the Members, 1893."

DEACONESSES' INSTITUTION AND HOSPITAL.—The friends of this institution, which is situated in South Tottenham, held their annual meeting on the 9th inst., under the presidency of Mr. John Cory of Cardiff. The report showed that the charity was growing in usefulness, both in regard to the number of patients admitted to the hospital and the instruction imparted to the ladies who have devoted themselves to the work of ministering to the sick. Fifteen out-stations—two of them foreign—are now under the sisters' control. The financial condition of the institution, however, is not so prosperous as might be desired, there being a deficit of £1850 to be recorded—a state of things which it may be hoped will be speedily remedied by the liberality of those who are interested in the welfare of the sick poor.

BEQUESTS AND DONATIONS TO HOSPITALS.—The late Mrs. Marion J. Carter of Ospringe, Kent, bequeathed £500 each to the Hospital for the Paralysed and Epileptic, Queen's-square, Bloomsbury; the Asylum for Idiots, Earlswood; the Hospital for Incurables, Putney Heath; and the Cancer Hospital, Brompton.—The Treasurer of the South Devon and East Cornwall Hospital, and the Plymouth Public Dispensary, has received from the executors of the late Mrs. Tabitha Stephens of Albany-place, Plymouth, £2500 towards the general funds of the hospital, £500 towards the Hospital Samaritan Fund, and £1000 for the Plymouth Public Dispensary.—The late Earl of Derby bequeathed £1000 to the Brompton Hospital for Consumption.—Mr. James Moon, late of Buckland-crescent, Belsize Park, Hampstead, bequeathed £500 to the Children's Hospital, Great Ormond-street, London.—The Corporation of the City of London has made grants of 100 guineas each to the Metropolitan Dispensary, the West London Hospital, and the Metropolitan Hospital, Kingsland-road.—The Aberdeenshire Football Association has allocated the proceeds of their charity matches to the following medical charities, Aberdeen: £50 to the Royal Infirmary, £25 each to the Sick Children's Hospital and Aberdeen Dispensary and £10 to the Convalescent Home.—The late Mr. Robert E. Mellersh of Godalming bequeathed £100 each to the Earlswood Asylum for Idiots and the Royal Hospital for Consumption at Ventnor.—Mr. Samuel Davies, late of Mollington, bequeathed £300 to the Chester Infirmary.—Mrs. E. Young Smith, late of Drumblair Lodge, Forque, bequeathed £100 each to the Aberdeen Hospital for Incurables and the Royal Infirmary and £50 each to the Convalescent Hospital and the Sick Children's Hospital, Aberdeen.—Mr. George Wilson, late of Aberdeen, bequeathed £200 to the Sick Children's Hospital, Aberdeen, and £150 each to the Aberdeen Royal Infirmary and the Hospital for Incurables.—Mrs. Elizabeth Richards, late of Aberdeen, bequeathed £2000 to the Carmarthen County and Burgh Infirmary, South Wales; £100 to the Royal Infirmary, Aberdeen; £500 to the Aberdeen Hospital for Incurables and £100 to the Aberdeen Sick Children's Hospital.—Mrs. M. Murray Gordon, late of Aberdeen, bequeathed £300 to the Royal Infirmary, Aberdeen.—The late Mr. John Florence, of Aberdeen, bequeathed £200 to the Royal Infirmary, Aberdeen, and £100 to the Aberdeen Hospital for Incurables.—Mrs. Elizabeth Rutherford, late of Aberdeen, bequeathed £100 to the Aberdeen Royal Infirmary, and £50 to the Aberdeen Hospital for Incurables.—Mrs. May Silver, late of Aberdeen, bequeathed £100 each to the Royal Infirmary, Aberdeen, and the Aberdeen Hospital for Incurables.—The late Mrs. Ann Barron, of Aberdeen, bequeathed £100 each to the Sick Children's Hospital, Aberdeen, the Hospital for Incurables, Aberdeen, and the Royal Infirmary, Aberdeen.

LORD ROTHSCHILD has forwarded 300 guineas to the Royal Hospital for Diseases of the Chest, City-road, E.C.

UNIVERSITY OF OXFORD.—At a congregation held on the 8th inst. the degree of M.D. was conferred on Mr. Joseph B. Nias, Exeter.

A NEW SANATORIUM FOR CARDIFF.—On the 7th inst. the memorial stone of a new sanatorium was laid by Alderman Jacobs on Ely Moor, Cardiff. The building, which has been erected by the Corporation, is designed for the treatment of patients suffering from infectious diseases.

BURY INFIRMARY.—A new wing to this infirmary will be opened by Lord Stanley on the 24th inst. This addition to the resources of the institution has just been completed at a cost of £3000 and will afford further accommodation to the extent of twenty beds.

PRESENTATION.—At a public meeting held on May 11th the members of the Fowler's Railway Servants' Ambulance Class presented Mr. H. Lewis-Hughes, L.R.C.P., L.R.C.S.Edin., with an aneroid barometer in recognition of his services as lecturer to the class. All the candidates who presented themselves for examination were successful.

FATAL ACCIDENT TO A SURGEON.—Mr. G. Newstead, M.R.C.S., of Eccleshill, near Leeds, is reported to have been killed whilst exercising, at an early hour, a newly-purchased horse. No one witnessed the accident, but he was in a dying condition when found and expired just after medical assistance arrived. He was seventy-five years of age.

VICTORIA UNIVERSITY.—Gold medals have recently been awarded as follows: To Dr. Albert John Chalmers for a dissertation on "Developments of the Septum Transversum" and to Dr. Theophilus Nicholas Kelynack for a dissertation on "The Pathology of the Vermiform Appendix." The dissertation of Dr. E. M. Brockbank on "Gall Stones" is deemed worthy of honourable mention.

THE BRIGHTON CORONERSHIP.—The General Purposes Committee of the Town Council of Brighton met on the 8th inst. to consider the question of selecting a coroner in the room of Mr. David Black, deceased. There were four candidates, three of them belonging to the legal, and one, Councillor James Turton, F.R.C.S., to the medical profession. It is stated that the choice of the committee has fallen on Councillor Plunkett, M.A. The selection, however, will have to be confirmed by the Town Council itself.

THE HOSPITAL OF ST. JOHN OF JERUSALEM.—The Prince of Wales, as Grand Prior of the Order of the Hospital of St. John of Jerusalem in England, of which the Queen is sovereign head and patron, has fixed Saturday, June 24th, for unveiling the memorial at St. John's-gate, Clerkenwell, to the late Duke of Clarence, who was first subprior of the Order since its incorporation. The ancient gateway, which once formed the entrance to the priory of Clerkenwell, has attached to it a very interesting history, part of it having passed through the vicissitudes of more than eight hundred years. As far as possible the old work has been preserved, new material being supplied only when absolutely necessary. The Prince of Wales will, on the occasion above referred to, be accompanied by other members of the Royal Family, and we are informed that advantage will be taken of the event for the presentation by his Royal Highness of the medals and certificates of honour awarded by the Order during the past year for acts of gallantry in saving life on land.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The Fertilisers and Feeding Stuffs Bill.

A BILL to Amend the LAW with respect to the Sale of Agricultural Fertilisers and Feeding Stuffs has been prepared and brought into Parliament by Mr. Herbert Gardner, Mr. John Morley and the Lord Advocate. The provisions of this Bill are that everyone who sells such articles must give a warranty setting forth their composition and purity. Thus, when any article sold for use as food or cattle is sold as oilcake, it shall be deemed, unless the contrary is alleged at the time of sale or may be inferred from the circumstances of the sale, to be composed of linseed only. Contraventions of these requirements may on conviction be punished by a fine not exceeding £20 for the first or £50 for a subsequent offence. Should the seller infringe the law in ignorance he may escape conviction, but must pay the costs of the prosecutor. Such an one may, however, take action against the original vendor, but the latter may prove that the conviction was wrongful or the costs unreasonable. There is a "right of set-off" in civil proceedings—that is, the excess of one ingredient may be set off against the deficiency of another. There is to be a chief analyst appointed by the Board of Agriculture and a district analyst appointed by county councils or the councils of any county borough or boroughs, such appointments to be subject to the approval of the Board of Agriculture. The buyer who desires to have an article analysed may take three samples, retaining one, giving one to the seller and the third to the district analyst, provided the latter accepts it on payment of a sanctioned fee. There is appeal to the chief analyst. Prosecutions for offences under this Act can only be instituted with the sanction of the Board of Agriculture. The term "cattle" does not include horses. The Act applies, with local modification of terms and conditions, to both Scotland and Ireland.

The Vaccination Bill.

A petition against this Bill was presented to the House of Commons on Friday, the 9th inst., on behalf of the Royal College of Physicians of Ireland.

A Bill for the Restraint of Drunkenness.

A short Bill to prohibit the sale of intoxicating liquors to persons of drunken habits has been prepared and brought into the House of Commons by Mr. Bill, Captain Bowles and Mr. Hanbury. The purpose of this measure is to make it penal for any person who shall have been previously convicted of drunkenness within the preceding twelve months to enter any licensed premises; and to prohibit any licensed person from selling or delivering any intoxicating liquor to the convicted person during the aforesaid period. The penalty for the offence of selling to persons convicted of drunkenness or of inviting such persons to enter licensed premises is 20s., but is not to exceed 40s. for a second offence. The Bill does not apply to Scotland or to Ireland, or to any city, borough, county of a town town, township or other place having a population, according to the census or 1891, of more than 20,000 inhabitants.

Swine Fever.

At the Board of Agriculture on Tuesday Mr. Herbert Gardner (accompanied by Mr. Elliott, Sir Jacob Wilson, Professor Brown and Mr. Anstruther) received a deputation from the Central and Associated Chambers of Agriculture to urge that steps should be taken at once to stamp out swine fever in accordance with the recommendations of the recent departmental committee on the subject. Several members of Parliament interested in the question accompanied the deputation and gave utterance to the views they entertained on the matter in hand.—Mr. Gardner, in reply, called attention to the remarks which Mr. Chaplin had made on former occasions, with which, said the right hon. gentleman, he almost entirely agreed. The action of the central authority in supervising and administering the means adopted to limit, and if possible to extirpate, the plague would, however, be unavailing unless the local authorities would second the efforts put forth by the Government department and be prepared to bear some of the expense. If only the financial difficulty were removed the object they all had in view would be immensely facilitated. He saw no reason for refusing to deal with the matter at the present time and would be glad if he could induce his colleagues to comply with the desire expressed by the deputation.

THE HOUSE OF LORDS.

MONDAY, JUNE 12TH.

Sale of Intoxicating Liquors (Ireland) Bill.

In Committee this Bill was considered, and Lord Rookwood moved an amendment to words in the first clause, by which it was proposed that the time during which public-houses might be open in Dublin, Cork, Limerick, Belfast and Waterford, should be altered from two to five o'clock instead of from two to seven as at present. Lord Plunket advocated absolute Sunday closing in the towns mentioned. After considerable discussion, however, Lord Rookwood's amendment was agreed to, and the Bill passed through Committee.

Adulterated Food Stuffs.

With regard to this question, the Duke of St. Albans asked whether the Government proposed to take any steps in concert with foreign nations to check the importation of sophisticated food stuffs consigned as genuine butter, cheese and such like articles of diet.—Lord Playfair, in reply, said the Government could not hold out the prospect of any international agreement in respect to that matter.

The Pollution of Rivers.

Viscount Cross called attention to the difficulties which had arisen in working the Rivers Pollution Prevention Act, 1876. These difficulties had, he said, been found so great in Lancashire that its County Council had last year obtained a private Act for the purpose of preventing the pollution of the Mersey and its tributaries. He was therefore desirous that the whole country should participate in the benefit of that Act, and

with that intent he presented a Bill which was drawn on the same lines, but with a few necessary alterations. He asked that the Bill might be read a first time. Lord Thring seconded the motion for a first reading. Lord Norton supported it and the Bill was read a first time.

THE HOUSE OF COMMONS.

THURSDAY, JUNE 8TH.

The Sewage of Coventry.

On the order for the second reading of the Local Government Provisional Orders (No. 17 Bill), Mr. Paulton moved that the Bill be read a second time that day six months His objection to the Bill was that it was intended to empower the Corporation of Coventry to adopt a new scheme for the disposal of the sewage of the town. Mr. Fowler said as there was much conflict of opinion on the subject, he would suggest that the question be sent to a committee, and this course was ultimately adopted.

Proposed Isolation Hospital at Harrow.

Mr. Little asked the President of the Local Government Board whether the Harrow Local Board had requested the Local Government Board to sanction a loan for the purpose of erecting an isolation hospital for infectious diseases on Dec. 7th last; whether an inquiry was held on April 5th; and whether any communication had yet been made to the Harrow Local Board as to the result of the said inquiry?—Mr. Henry Fowler said the Local Government Board had been informed of the suggestions which had been made with regard to the proposed hospital by the inspector by whom the inquiry was held, and subject to such suggestions being satisfactorily met the loan applied for would be sanctioned by the Local Government Board. The facts as to the date of the application and of the inquiry were as stated. The inquiry was one which it was necessary should be held by two inspectors of the department, an engineer and a medical inspector, and the arrangements with regard to the large number of provisional order inquiries and the visitation of the ports by the medical inspectors in connexion with the precautions against cholera occasioned in this case an exceptional delay which was regretted.

FRIDAY, JUNE 9TH.

Experiments on Living Animals.

On this matter Mr. John Ellis put five questions to the Home Secretary, to which the right hon. gentleman replied *seriatim*. First, that whereas in 1878 27 persons held licences and performed 481 experiments, in 1892 125 persons held licences and performed 3960 experiments. The reason for the rise in number was to be found partly in the increased facilities afforded for such researches by improved methods of anæsthetisation and the antiseptic treatment of wounds. The largest proportion of the additional experiments performed in 1892 were cases of simple inoculation and were chiefly resorted to for the benefit of the Royal Commission on Tuberculosis. With regard to the other questions, Mr. Asquith said the qualifications of every licensee were strictly inquired into; every licensed place was visited during the year 1892 and in some cases more than once. The right hon. gentleman said he was satisfied that the system adopted by the inspectors was such as to secure the object desired.

MONDAY, JUNE 12TH.

Fever and Small-pox Hospitals.

Mr. Goschen asked the President of the Local Government Board if he would undertake to assist the Metropolitan Asylums Board in acquiring further sites for fever and small-pox hospitals, since the latter Board had declared their inability to accommodate more patients than they had been asked to receive.—In replying to the question Mr. H. Fowler went into some detail with regard to the action of the Local Government Board during the last three years in connexion with the proposed Tottenham and other sites. The Board, said Mr. H. Fowler, however desirous they might be to assist the managers in the acquisition of sites, were bound to exercise the power thus entrusted to them with a due regard to their responsibility to Parliament and the public. He could only say that he would do everything in his power in the way of giving prompt attention to any proposals which the managers might submit to him for providing further accommodation for persons afflicted with infectious disease.

TUESDAY, JUNE 13TH.

Precautions against Epidemics.

Mr. W. Johnston asked if, in view of the possibility of the recurrence of future epidemics, the President of the Local Government Board would give increased sanitary powers to county councils to enable them to enforce in all dwellings the periodical removal of unwholesome matter and thus to assist in preventing infectious disease.—Mr. H. Fowler said that urban and rural sanitary authorities had already the power referred to, and he saw no necessity for further legislation in that direction.

THURSDAY, JUNE 15TH.

Underground Bakeries.

Mr. E. H. Bayley asked the President of the Local Government Board whether, in view of the large and increasing number of unventilated and unventilatable underground bakehouses in London (there being twenty-one in one parish in Southwark alone), causing injury to the health of the journeymen bakers and possible contamination of the food of the public, he would, in order to prevent the evil in future, insert a clause in the Public Health (London) Act, 1891, forbidding cellar bakehouses and requiring all bakehouses to be registered direct by the sanitary authority previously to their being opened, in a similar manner to that adopted in the case of slaughter and cow houses; whether he would state approximately the number of underground workshops and dwellings in London; and, whether, with a view to prevent the use of such dwellings, he would cause the elimination of the word "separate" from Section 96 (1) of the Public Health (London) Act, 1891.—Mr. Fowler, in the course of his reply, said that there were provisions in the Sanitary and Workshops Acts and likewise in the Public Health (London) Act, 1891, which could be enforced by sanitary authorities in their respective districts against any places of this kind which were in such an insanitary condition as to amount to a nuisance. A court of summary jurisdiction had power to take cognizance of any offences which might be brought to its notice. He had no information as to the number of underground workshops and dwellings in London.

Medical Appointments in Burmah.

Mr. Caine asked the Under Secretary of State for India whether the Sanitary Commissioner for Rangoon port and city also held the additional offices of deputy-surgeon-general and inspector of gaols with civil administration for Burmah; whether there were thirty-six gaols in Burmah, with many thousands of prisoners; whether the civil medical department was at present engaged in establishing a new system of dispensaries and hospitals throughout Burmah; and whether the health of the city and port of Rangoon furnished full employment for a medical officer, and, if so, would the Secretary of State direct the appointment of separate medical officers for each of these departments.—Mr. Russell replied: No; there are separate health officers for Rangoon city and Rangoon port, both being subordinate to the head of the provincial medical and sanitary departments, who is also Inspector-General of Gaols. There are not thirty-six but thirty-one gaols in Burmah, containing about 11,500 prisoners. So far as the Secretary of State is aware, no new system is being introduced, though the existing system is being constantly extended and improved. In these circumstances the Secretary of State sees no reason as at present advised to issue instructions.

Imperial Assistance to Port Sanitary Authorities.

In reply to Mr. Harry Foster, Mr. Henry Fowler stated that the hon. gentleman was better aware than he was of the feeling of the House upon this question. There could be no doubt that this was a severe burden upon the local ratepayers. As to whether he would use his influence to secure an advance out of public funds, he could only say that although he entertained a very strong opinion on the question yet he understood that a deputation of members of this House were intending to see him and lay before him their view of the matter, and he thought it would be disrespectful to them if he were to express his opinion now.—Mr. Foster asked whether the right hon. gentleman was not aware of the severe burden which this work had placed upon the local ratepayers and whether in one case a rate of 9*d.* in the pound had been found necessary.—Mr. Fowler replied that such a case had been mentioned to him, and although he did not dispute the fact he had no means of verifying it. He had received no complaints on the subject.

THE COMMITTEE ROOMS.

DEATH CERTIFICATION.

THE Select Committee of the House of Commons on Death Certification resumed its inquiry on Friday, the 9th inst., Sir Walter Foster occupying the chair.

SIR CHARLES CAMERON, who is himself a member of the Committee, was further examined by the Chairman. He explained that he had received a letter from the Chief Constable of Dundee in which the Committee was urged to recommend the establishment of a special registry in each of the three Kingdoms for unclaimed dead bodies. Another document he had received was a memorial from the British School of Eclectic Medicine. The purpose of it was to counteract what were regarded by the memorialists as the evil effects of the evidence the Committee had received from Mr. Charles Walden on behalf of the Society of Medical Herbalists. The memorialists sought that in the matter of death certification the liberty now enjoyed by medical dissenters might be extended rather than curtailed. They regarded Mr. Walden's evidence with serious dismay. They did not seek any monopoly and they did not require any, but they asked that all *bonâ fide* medical herbalists, whether of this or the other society or whether outside any society, should have such rights and liberties in respect to their practice as would enable them to do full justice to the public whose servants they were, to their medical system and to themselves. He had received a communication from Mr. Lowndes of Liverpool with reference to the insurance murder cases which he had mentioned when before the Committee. The effect of the communication was that there they had a case in which it was suspected that a man had been poisoned and in which they desired to exhume the body with a view of ascertaining the cause of death, but in which it was impossible to find the body. He had also received a letter from Dr. Rentoul of Liverpool giving an analysis of the callings of the registrars of deaths in Scotland. In another communication Mr. Braxton Hicks emphasised the recommendation that a medical assessor should be attached to the coroner's office. He said that all uncertified deaths should be reported to the coroner, that there should be an inquiry from a medical point of view, that the coroner's officer should concurrently make inquiry into the surrounding circumstances, and that the coroner should decide as to the necessity for an inquest. He thought that the lectures given to students in medical jurisprudence should afford instruction as to the proper way to make out certificates of death. He had also received a letter from Dr. Hime of Bradford as to the relative mortality amongst legitimate and illegitimate children. In the borough of Bradford in 1885 the rate of infants per 1000 born was—legitimate 89·6 and illegitimate 160·9; in 1886 it was legitimate 107·2 and illegitimate 211·0. Dr. Jephson, medical officer of health for the western district of Durham, had sent some figures showing a high percentage of uncertified deaths in his district. In 1892 the percentage was 22·9, in 1891 it was 23·0 and in 1890 it was 29·0.

Dr. OGLE, examined by the Chairman, said he had charge of the vital statistics in the office of the Registrar-General. There were three purposes to which the registration of deaths was intended to be subservient: firstly, legal purposes where proof of death was required, say, for the payment of insurance money; secondly, the prevention or interference at any rate with murder or foul play generally; and, thirdly, the provision of trustworthy data for the elaboration of statistics regarding health, disease and mortality. He could hardly say that the first of these was fairly well met. Doubtless great improvements had been made, but there was one great flaw, and that was that there was no verification of the fact of death. From the legal point of view that was a very grave defect, because it was perfectly possible to register a death that had never occurred. It was not a rare thing to have a death registered in these circumstances. The defect arose from the medical practitioner not being required to see the body. In a large proportion of cases the medical man did not see the body. In making out his certificate he took advantage of the words "as I am informed." This absence of verification of the fact of death frequently led to fraud in

connexion with insurance companies. Quite recently a case occurred in which a medical man was called upon to give a certificate of death for a person he had seen some little time previously. A week afterwards he was applied to to give a certificate of death for a person whom he had also seen some little time before, living at the same house. He made inquiry and he found that neither of the persons was dead. Another case had come to his knowledge in which an insurance agent registered a number of deaths of people whom he had insured and who had not died and he put the insurance money into his own pocket. Fraud arose in another way. The payments made for the insurance of life depended upon the age of the person insured, and it was in the interest of the person insured to understate the age. This was frequently done. When a death occurred the medical man, though he was not bound to do so, put in the age as a rule—an age in contradiction with what had been told the insurance company. Those concerned altered the age not necessarily upon the certificate, for the registrar was bound to take all the particulars except the cause of death, not from the medical man, but from the informant. He would take a case. A man died "aged sixty-eight; senile decay." "Oh," said the friends, "he was not sixty-eight; he was forty-one." Witness wrote to the medical man, saying there must be some mistake in certifying a death at forty-one as senile decay. The medical man replied, "I sent in a certificate saying he was sixty-eight, and I am certain he was so." He desired to point out another defect. The registrar was paid to a certain extent by the number of entries he made, and he did not know that it often happened; but there were two cases within his knowledge in which a registrar, in order to get the fees, entered a number of deaths that never occurred. He could not see that there were no possible means of preventing such a fraud. There were two travelling inspectors belonging to the office whose business it was to visit each registration office and they might—and they actually did to a certain extent—compare throughout the entries on the register with the certificates obtained by the registrar. This system would of course only affect certified deaths. He believed that the cases he had referred to were discovered by the inspectors. He laid it down, therefore, that there should be some verification of the fact of death in all cases. He was not prepared to say how it should be done. He included in verification of the fact of death identification of the body. Taking up the second point—the interference with murder or other foul play—Dr. Ogle said that the present system certainly did put some hindrance in the way; but he thought the protection was very much smaller than was generally supposed, because there was no difficulty whatever in obtaining a certificate of death from a practitioner who had never seen the patient in life or in death. The Registrar-General was bound by the Registration Act to supply gratuitously to all qualified medical men forms of death certificates; but there was no obligation on their part to use these forms, and in many cases they did not use them. They printed their own forms, many of them colourable imitations of those issued by the Registrar-General. Their object in printing their own forms was to omit the words, "Attended in the last illness." Consequently when a person wished to get a certificate he simply went to some low practitioner and said, "I want your certificate of the death of my child." "Oh," replied the practitioner, "I have not attended the child." "I know that," said the person wanting the certificate, "but I am ready to pay the fee." After that the registration authorities learned that the child died of convulsions. When the certificate was presented to the registrar he had no means of knowing whether or not the medical man had been in attendance.

The Chairman: That is a serious charge against individual members of the medical profession. Can you give any instances?

Dr. Ogle: I have seen these certificates many times in which the words I have mentioned are omitted.

The Chairman: But that may arise in very legitimate circumstances.

Dr. Ogle: They were printed certificates, printed at the man's own expense, whereas he might have had gratuitously the forms issued by the Registrar-General. The fact that he went to this expense showed that the change was a thing he wished to avail himself of.

The Chairman: But the motive might have been honourable and nothing like covering up anything like crime or fraud.

Dr. Ogle: Quite so. I am not supposing that the medical man knew that foul play had been committed. What I say is that he wishes to give a certificate without having attended.

Sir Henry Roscoe: That in itself, if not dishonest, is very sharp practice.

Dr. Ogle: I think it is an act which should be prevented if possible, for it gives a loophole for foul play.

The Chairman: Certainly, and to that extent is reprehensible on the part of any medical man. But have you any reason to think that it is done extensively?

Dr. Ogle: I have seen a great many of them.

Mr. Brookfield: It is a notorious practice?

Dr. Ogle: Yes, it is a notorious practice.

The Chairman: You really seriously think that these certificates are printed with the words about attendance left out, in order to cover a notorious practice of giving death certificates where the doctors have not attended?

Dr. Ogle: I do.

The Chairman: For the comparatively small gain of a half-crown fee a number of medical men carry on this practice?

Dr. Ogle: They do. In further examination Dr. Ogle explained that the Registrar-General had put the matter before the Local Government Board and had been advised that he could not reject such certificates. He admitted that there was a widespread feeling amongst members of the medical profession that they were not fairly treated in being called upon to give death certificates without fee, but he did not see that this affected the question of printing these special forms.

Sir Charles Cameron: You classify in your reports the certified and uncertified deaths. I wish to ask you whether that classification depends upon anything in the statute or in the law, or upon a regulation of the office?

Dr. Ogle: There is no law affecting these returns at all. They are not issued by any act or in accordance with any statute, but simply are ordinary returns to the Local Government Board.

The Chairman: It is also possible for a medical man who knows that death is due to violence or some such cause to give a certificate that will hide that fact?

Dr. Ogle: Yes, and I am sorry to say it is not of rare occurrence.

The Chairman: And it is done rather from sentimental regard for the feelings of the relatives than anything else?

Dr. Ogle: Yes, that is so.

The Chairman: But it may be used for the purpose of covering up crime? Have you known any instances of that kind?

Dr. Ogle then stated that in 1891 a certain girl died. The medical man who had attended her for some time gave a certificate stating hæmorrhage in the cranial cavity to be the cause of death. The mother came to the registrar and said that her girl had been badly treated and eventually the matter was referred to the coroner, when it was shown that the girl had been misused by her mistress and a verdict of manslaughter was returned against the mistress. The medical man was prosecuted, but the Bench held that to state the secondary cause of death as he had done was sufficient, that he was not bound to say anything as to the violence and injuries, and that he left the court without a stain upon his professional or moral character. Here was another case: A lady went down to stay at a lunatic asylum, according to the medical man's statement who kept the place, not as a patient but as a friend, although she had a nurse with her. When there she cut her throat and died after five days. A medical certificate was given—inflammation of the throat. The death was registered and the body sent away to the place whence the deceased came. Information reached the Registration Office and they referred it to the Home Office. The certificate was not given by the man who kept the asylum but by another doctor living outside. He would give a third case that came under his notice not long ago. A person died from drowning—whether by accident or not, he did not know. The medical man put the cause of death in Latin, knowing that the local registrar would probably not understand the meaning of the term, and the death was registered without any reference to the coroner. The matter came to the knowledge of his office when they were extracting the causes of death a year afterwards. They asked the registrar whether the case had been referred to the coroner, and he replied that it had not, because he saw no reason why it should be referred to him. Another instance he might cite was that of a woman who was returned as dying from peritonitis. According to the belief of the people of the place her death was caused by her husband having kicked her in the abdomen. The case was referred to the coroner and went entirely out of the hands of his own office. He was giving these instances to illustrate suspicious cases which came under his notice without any reference to the ultimate proceedings and merely to show that there were no adequate means of securing the treatment of such cases by the coroner. The registrar was instructed by the Registrar-General to refer to the coroner all deaths due to violence, all deaths that were sudden without any medical certificate, and all cases in which he entertained any suspicion, but the registrar was not, in a very large number of instances, a man suitable for that responsibility. He did not mean to imply that he acted dishonestly, but he was not, as a rule, an educated man or a man with whom the decision of whether a case was suspicious ought to rest. His view was that this was not a business belonging to the registration system at all. It belonged to the coroner's system, this inquiry as to whether cases were suspicious or not, and he should himself—though he was by no means certain that the Registrar-General would agree with him—shunt the whole business off the registration system and put it upon the coroner's system. In every case, whether certified or not, he would have a copy of the entry sent at once to the coroner, to deal with as he chose. He should think great difficulty would be experienced if suspicious cases were referred to medical officers of health. With respect to the certificate, the chief practical remedy he would suggest was that no death should be considered legally certified unless it were certified upon the form issued by the Registrar-General. Very recently they had improved the precautions with regard to the issue of certificate forms. They numbered every book and every certificate in the book and the registrar was directed to keep an account of the men to whom he gave the forms. If the registrar did his business properly he could therefore trace every form. In his opinion the certificate should be largely changed. Its form should be carefully considered by the Registrar-General and by representatives of the medical profession. In his opinion the form should state that the certifier attended personally in the last illness, it should state the date of the last attendance during life, and there should be a limit fixed for the time of that attendance. It should also state that in the opinion of the certifier neither violence nor foul play took any part directly or indirectly in the production of the death. Dealing with the third point—the provision of trustworthy data for the elaboration of vital statistics—Dr. Ogle said that the first defect consisted in the very large number of deaths that were neither certified by medical men nor by coroners. There were also a large number of cases in which the cause of death was stated in such an inadequate way as to be useless for the purpose of classification. Then, again, the coroners did not give proper returns as to the cause of death. A large number of coroners were under the impression that the only object of an inquest was to ascertain whether or not there had been violence. He found it stated in the report of the Registrar-General for 1882 that in Norwich there were fifty-five inquests and that in only thirteen of these was the nature of the cause of death stated. Some of the verdicts given by coroners' juries were ludicrous. Here was one that came before him some time ago. A man died in an infirmary and the jury returned the verdict: "From stone in the kidney, which stone he swallowed whilst lying on a gravel path in a state of drunkenness." Another was: "Three months old; found dead, but no evidence whether born alive." Witness handed in a number of tables as to the percentage of uncertified deaths to the total number in each of the registration counties and the twenty-eight large towns. These tables showed a considerable variation in different places. In Halifax the percentage was 6·5; in Oldham, 4·7; in Sheffield, 5·1; in London, 1·1; in Portsmouth, 1; and in Plymouth, 0·9—the average for the twenty-eight towns being 2·2. In the counties North Wales had a percentage of 8·5; South Wales, 7·0; Durham, 5·4; Hereford, 5·5; Huntingdon, 5·2; and Middlesex, 0·9—the average being 0·33.

By Sir Charles Cameron: He thought that the registration of stillbirths was impracticable, although he admitted that deceased children were often buried as stillbirths.

By Mr. Brookfield: The salaries of the travelling inspectors were from £400 to £620 a year. Their position was considered a very desirable one and was generally given to a senior clerk. The inspectors sent to the chief clerk a return of the places they had visited and the condition in which they had found the books &c. It would be a distinct advantage to have more of these inspectors, because two were an absolutely inadequate number.

The Committee then adjourned till Tuesday, the 20th inst.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week for publication in the next number.*

BARCLAY, J., M.D., C.M. Aberd., has been reappointed Parochial Medical Officer for Banff.

BETENSON, W. R., L.R.C.P.Lond., M.R.C.S., has been appointed Medical Officer for the Fifth Sanitary District of the Henstead Union.

CAUDWELL, F. B. H., L.R.C.P.Lond., M.R.C.S., has been appointed Medical Officer for the Coggeshall Sanitary District of the Braintree Union, vice Simpson.

CHADWICK, JOHN, M.R.C.S., has been appointed Medical Officer for the Butterworth Sanitary District of the Rochdale Union, vice Ogden.

COX, WALTER MUNDY, M.R.C.S., L.R.C.P.Lond., has been appointed Resident Surgical Officer to the Children's Hospital, Birmingham.

DALGARNO, J. J. Y., M.B., C.M.Aberd., has been reappointed Medical Officer for St. Nicholas Parish, Aberdeen.

ECCLES, G. H., L.R.C.P.Edin., M.R.C.S., has been appointed Medical Officer to the Braintree Union Workhouse, vice Taylor, resigned.

FIRTH, J. LACY, M.D., B.S.Lond., F.R.C.S., has been appointed House Surgeon to the Bristol General Hospital.

GLASSINGTON, CHAS. W., M.R.C.S., L.D.S. Edin., has been appointed Dental Surgeon to the National Dental Hospital, vice W. R. Humby, L.D.S.Eng., resigned.

GORDON, J., M.D., C.M.Aberd., has been reappointed Parochial Medical Officer for St. Nicholas, Aberdeen.

GORDON-SMITH, JOSEPH, L.R.C.P., L.R.C.S.Edin., L.F.P.S.Glasg., has been appointed Government Medical Officer for the Good Hope District, Trelawny, Jamaica, W.I.

HARKNESS, A. C., L.R.C.P., L.R.C.S.Edin., L.F.P.S.Glasg., has been appointed Medical Officer for the Whitmore Sanitary District of the Newcastle-under-Lyme Union, vice Macindoe, resigned.

HARTRIDGE, GUSTAVUS, F.R.C.S., has been appointed Lecturer in Ophthalmic Surgery to the Westminster Hospital Medical School.

IRONSIDE, JAS., M.B., C.M.Aberd., has been reappointed Parochial Medical Officer for Garvock.

LYON, A. B., M.B., C.M.Aberd., has been appointed *pro tem.* Medical Officer for the Macduff Sanitary District, vice Hitchcock, resigned.

MANNING, N. S., L.R.C.P., L.M.Lond., K.Q.C.P.Irel., has been appointed Medical Officer for the Combmartin Sanitary District of the Barnstaple Union.

MCARTHUR, D. C., L.R.C.P.Lond., M.R.C.S., has been appointed Medical Officer for the Sixth Sanitary District of the South Molton Union.

MCGEE, J. H., M. B., B.Ch.Irel., has been appointed Resident Surgeon to the Mater Misericordiæ Hospital.

O'RAFFERTY, JAS. C., L.R.C.P., L.R.C.S.Edin., L.F.P.S Glasg., has been appointed Medical Officer of the Waltham Sanitary District of the Melton Mowbray Union, vice Emerson, resigned.

RENNET, DAVID, M.B., C.M., D.P.H. Aberd., has been reappointed Medical Officer for St. Nicholas Parish, Aberdeen.

SCROGGIE, J. G., M.B., C.M.Aberd., has been reappointed Parochial Medical Officer for St. Nicholas, Aberdeen.

STEVENS, PERCY R., L.R.C.P.Lond., M.R.C.S., has been appointed Medical Officer for the Bocking Sanitary District of the Braintree Union vice Taylor, resigned.

TAYLOR, S. T., M.B.Lond., L.R.C.P, M.R.C.S., has been reappointed Medical Officer of Cromer.

TIPPING, HENRY HUBERT, M.R.C.S., L.R.C.P.Lond., has been appointed Resident Medical Officer to the Children's Hospital, Birmingham.

WHITEFORD, C. HAMILTON, M.R.C.S., L.R.C.P.Lond., has been appointed House Surgeon to the Coventry and Warwickshire Hospital, Coventry.

WRIGHT, J. CAMPBELL, L.R.C.S., L.R.C.P. Edin., L.F.P.S., has been appointed an Assistant Colonial Surgeon to the Gold Coast Colony, West Africa.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BELGRAVE HOSPITAL FOR CHILDREN, 79, Gloucester-street, S.W.—House Surgeon. Board, lodging, fuel and lights provided.

BOROUGH HOSPITAL, Birkenhead.—Junior House Surgeon. Salary £60 per annum, with board and lodging, but no wine, spirits or beer. A further sum of from £20 to £25 per annum is usually obtained in fees.

BRADFORD INFIRMARY AND DISPENSARY.—House Surgeon. Salary £110 per annum.

CANCER HOSPITAL (Free), Fulham-road, S.W.—Honorary Pathologist.

CENTRAL LONDON OPHTHALMIC HOSPITAL, 238, Gray's-inn-road.—House Surgeon. Rooms, coals and lights provided.

CHELSEA, BROMPTON AND BELGRAVE DISPENSARY, 41, Sloane-square, S.W.—Physician.

CHELSEA, BROMPTON AND BELGRAVE DISPENSARY, 41, Sloane-square, S.W.—Surgeon.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria-park, E.—Assistant Physician.

COUNTY ASYLUM, Lancaster.—Assistant Medical Officer, who shall act as Pathologist; unmarried. Salary £100, increasing by annual instalments of £25 to £200 per annum, with furnished apartments, board &c.

CROYDON GENERAL HOSPITAL.—House Surgeon, for two years. Salary £100, increasing £10 per annum up to £120, with board and residence in the hospital.

KIDDERMINSTER INFIRMARY.—House Surgeon: unmarried. Salary £140, increasing by £10 per annum to £170, with rooms in the Infirmary and attendance.

KING'S COLLEGE HOSPITAL, London.—Anæsthetist.

LIVERPOOL DISPENSARIES.—Assistant Surgeon; unmarried. Salary £80 per annum, with apartments, board and attendance. Applications to the Secretary, Leith Offices, Moorfields.

MONKWEARMOUTH AND SOUTHWICK HOSPITAL.—House Surgeon. Salary £80 per annum, with board, lodgings &c. Applications to Hon. Secretary, 5, Bedford-terrace, Sunderland.

NEWPORT AND MONMOUTHSHIRE INFIRMARY, Newport, Mon.—House Surgeon. Salary £100 per annum, with board and residence (no stimulants provided).

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, N.W.—Resident Medical Officer for four months. Salary at the rate of £60 per annum, with board and residence.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, N.W.—Physician to Out-patients.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—Examiner to the Court of Examiners.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, E.C.—Assistant Physician.

ST. BARTHOLOMEW'S HOSPITAL AND COLLEGE, E.C.—Demonstrator of Chemistry, and also Assistant Demonstrator of Chemistry.

ST. PANCRAS AND NORTHERN DISPENSARY, 126, Euston-road.—Honorary Physician. Applications to Hon. Secretary, 23, Gordon-street, Gordon-square, W.C.

UNIVERSITY COLLEGE, London.—Obstetric Physician.

Births, Marriages and Deaths.

BIRTHS.

BEST.—On June 10th, at Cambridge-terrace, Dover, the wife of W. J. Duncan Best, M.R.C.S., L.S.A., of a son.

COCKEY.—On June 12th, at Little Waltham, Chelmsford, the wife of E. Percival Cockey, M.D. Lond., of a son.

CURNOCK.—On June 2nd, at The Chestnuts, Cleveland-road, South Woodford, the wife of G. Dennis Curnock, L.D.S. Eng., of a son.

GAY.—On June 12th, at Upper Richmond-road, Putney, S.W., the wife of John Gay, M.R.C.S., L.R.C.P., D.P.H., of a son.

KILLICK.—On June 13th, at Willton, the wife of C. R. Killick, M.B., of a son.

MURRAY.—On June 7th, at Saville-place, Newcastle-on-Tyne, the wife of George R. Murray, M.B., of a daughter.

MARRIAGES.

EVANS—WHITELAW.—On June 8th, at Mayfield Church, Edinburgh, Percy C. Evans, M.D. Lond., of 58, James-street, Cardiff, eldest son of the late Anthony Evans, of Tavistock-place, London, to May Allan Whitelaw, only daughter of John Whitelaw, Esq., of Moston-terrace, Edinburgh.

MENZIES—BERRY.—On June 12th, at the Church of St. Phillip and St. James, Dublin, James Adie Menzies, M.B., C.M., third son of William John Menzies, Esq., W.S., Canaan House, Edinburgh, to Isabel, daughter of Marlborough Parsons Berry, Esq., J.P., of Clooneen, King's County, Ireland.

RAYNER—CHAPMAN.—On June 7th, at Christchurch, Brondesbury, by the Rev. C. Dale Williams, Rector, William Rayner, M.R.C.S., L.S.A., of Uxbridge, to Alice Augusta (Gussie), second daughter of Henry Chapman, Buckley-road, Brondesbury, N.W.

SAMMAN—WOOD.—On June 7th, at the Parish Church, Ilkley, Yorkshire, by the Rev. S. G. C. Ross, Charles Thomas Samman, Army Medical Staff, Curragh Camp, Ireland, to Eugénie, widow of the late Ernest Stanley Wood of Eccles, Manchester, and fifth daughter of the late James Galloway of Bowdon, Cheshire.

STEVENS—NEWTON.—On June 14th, at the Church of the Good Shepherd, Lee, S.E., by the Rev. J. A. Owen, Vicar of the Parish, Geo. J. B. Stevens, M.R.C.S. Eng., L.R.C.P. Lond., of Wadhurst House, Newington-green, N., to Emma, daughter of the late Edwd. Newton, of High Legh, Cheshire, and niece of Mrs. S. Tyack, of 91, Burnt Ash-road, S.E.

WILSON—JESSOP.—On June 8th, at St. John's Church, Cheltenham, by the Rev. Arthur Armitage, Vicar, John Wilson, M.B., M.C., M.D., of 16, Cambray, Cheltenham, fourth son of the late Rev. Alexander Wilson, Bridgeton, Glasgow, to Lydia Annie Ada, eldest daughter of the late Henry E. Jessop, Surgeon, and Mrs. Jessop, Cheltenham.

DEATHS.

DALE.—On June 11th, at Falconer House, Scarborough, George Peckitt Dale, F.R.C.S. Eng., J.P., aged 72 years.

FADELLE.—On March 28th, Alfred Fadelle, M.R.C.S., L.R.C.P.Lond., fifth son of Joseph Fadelle of Dominica, West Indies, aged 25.

HALPIN.—On June 6th, at Auckland Lodge, Folkestone, Joseph Halpin, Staff Surgeon, R.N. (Retired), aged 56.

HENDERSON.—On June 12th, at his residence, Quisisana, West-hill, St. Leonard's-on-Sea, George Henderson, Esq., M.D., M.R.C.S., aged 73.

RAMSBOTHAM.—On June 11th, suddenly, at his residence, No. 15, Amwell-street, Myddelton-square, Walter Basnett Ramsbotham, M.D., Brigade-Surgeon (Retired), Army Medical Department, aged 60.

WAITE.—On June 12th, at his residence, No. 3, Old Burlington-street, Charles Derby Waite, M.D.Cantab., M.R.C.S., in his 87th year.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages and Deaths.

Medical Diary for the ensuing Week.

Monday, June 19.

KING'S COLLEGE HOSPITAL.—Operations, 2 P.M.; Fridays and Saturdays, at the same hour.

ST. BARTHOLOMEW'S HOSPITAL.—Operations, 1.30 P.M.; and on Tuesday, Wednesday, Friday, and Saturday at the same hour.

ST. MARK'S HOSPITAL.—Operations, 2 P.M.; Tuesday, 2.30 P.M.

ST. THOMAS'S HOSPITAL.—Ophthalmic Operations, 2.30 P.M.; Friday, 2 P.M.

ROYAL LONDON OPHTHALMIC HOSPITAL, MOORFIELDS.—Operations, daily at 10 A.M.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL.—Operations, 1.30 P.M.; and each day at the same hour.

CHELSEA HOSPITAL FOR WOMEN.—Operations, 2 P.M.; Thursday, 2 P.M.

HOSPITAL FOR WOMEN, SOHO-SQUARE.—Operations, 2 P.M.; and on Thursday at the same hour.

METROPOLITAN FREE HOSPITAL.—Operations, 2 P.M.

ROYAL ORTHOPÆDIC HOSPITAL.—Operations, 2 P.M.

CENTRAL LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M., and each day in the week at the same hour.

UNIVERSITY COLLEGE HOSPITAL. Ear and Throat Department, 9 A.M.; Thursday, 9 A.M. Eye Department, 2 P.M.

LONDON POST-GRADUATE COURSE.—Royal London Ophthalmic Hospital: 1 P.M., Mr. A. Stanford Morton: Ocular Injuries.

Tuesday, June 20.

GUY'S HOSPITAL.—Operations, 1.30 P.M., and on Friday at the same hour. Ophthalmic Operations on Monday at 1.30 and Thursday at 2 P.M.

CANCER HOSPITAL, BROMPTON.—Operations, 2 P.M.; Saturday, 2 P.M.

WESTMINSTER HOSPITAL.—Operations, 2 P.M.

WEST LONDON HOSPITAL.—Operations, 2.30 P.M.

UNIVERSITY COLLEGE HOSPITAL.—Skin Department, 1.45; Saturday, 9.15

ST. MARY'S HOSPITAL.—Operations, 1.30 P.M. Consultations, Monday, 2.30 P.M. Skin Department, Monday and Thursday, 9.30 A.M. Throat Department, Tuesdays and Fridays, 1.30 P.M. Electrotherapeutics, same day, 2 P.M.

LONDON POST-GRADUATE COURSE.—Hospital for Skin Diseases, Blackfriars: 4 P.M., Dr. Payne: The Treatment of Eczema and Cutaneous Affections generally.—Bethlem Hospital: 2 P.M., Dr. Percy Smith: General Paralysis of the Insane.

Wednesday, June 21.

NATIONAL ORTHOPÆDIC HOSPITAL.—Operations, 10 A.M.

MIDDLESEX HOSPITAL.—Operations, 1.30 P.M.; Saturdays, 2 P.M. Obstetrical Operations, Thursdays, 2 P.M.

CHARING-CROSS HOSPITAL.—Operations, 3 P.M., and on Thursday and Friday at the same hour.

ST. THOMAS'S HOSPITAL.—Operations, 1.30 P.M.; Saturday, same hour.

LONDON HOSPITAL.—Operations, 2 P.M.; Thursday and Saturday, same hour.

ST. PETER'S HOSPITAL, COVENT-GARDEN.—Operations, 2 P.M.

SAMARITAN FREE HOSPITAL FOR WOMEN AND CHILDREN.—Operations, 2.30 P.M.

GREAT NORTHERN CENTRAL HOSPITAL.—Operations, 2 P.M.

UNIVERSITY COLLEGE HOSPITAL.—Operations, 1.30 P.M. Dental Department, 9.30 A.M. Eye Department, 2 P.M.

ROYAL FREE HOSPITAL.—Operations, 2 P.M., and on Saturday.

CHILDREN'S HOSPITAL, GREAT ORMOND-STREET.—Operations, 9.30 A.M. Surgical Visits on Wednesday and Saturday at 9.15 A.M.

LONDON POST-GRADUATE COURSE.—Hospital for Consumption, Brompton: 4 P.M., Dr. Acland: On some Affections of the Bronchi.—National Hospital for the Paralysed and Epileptic: 2 P.M., Mr. Victor Horsley: The Surgery of the Nervous System.—Royal London Ophthalmic Hospital: 8 P.M., Mr. W. Lang: Strabismus.

ROYAL MICROSCOPICAL SOCIETY.—8 P.M. Dr. Nias: On the Development of the Continental Form of Microscope Foot.—Mr. C. Rousselet: On New and Little-known Rotifera.

Thursday, June 22.

ST. GEORGE'S HOSPITAL.—Operations, 1 P.M. Surgical Consultations, Wednesday, 1.30 P.M. Ophthalmic Operations, Friday, 1.30 P.M.

UNIVERSITY COLLEGE HOSPITAL.—Operations, 2 P.M. Ear and Throat Department, 9 A.M. Eye Department, 2 P.M.

LONDON POST-GRADUATE COURSE.—Hospital for Sick Children, Great Ormond-st.: 4 P.M., Mr. C. A. Ballance: Mastoid Disease.—London Throat Hospital (Great Portland-st.): 8 P.M., Dr. Woakes: Nasal Neurosis.—Central London Sick Asylum: 5.30 P.M., Mr. Thomas Bryant: Clinical Lecture.

Friday, June 23.

ROYAL SOUTH LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M.

UNIVERSITY COLLEGE HOSPITAL.—Eye Department, 2 P.M.

LONDON POST-GRADUATE COURSE.—Hospital for Consumption, Brompton: 4 P.M., Dr. Percy Kidd: Cases of Laryngeal Tuberculosis.—Bacteriological Laboratory, King's College: 11 A.M. to 1 P.M., Prof. Crookshank: Typhoid Fever, Diphtheria, Rabies and Tetanus (Sections and Cultivations).

Saturday, June 24.

UNIVERSITY COLLEGE HOSPITAL.—Operations, 2 P.M.; and Skin Department, 9.15 A.M.

LONDON POST-GRADUATE COURSE.—Bethlem Hospital: 11 A.M., Dr. Hyslop: Lunacy Law.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, June 15th, 1893.

Date	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Dry Bulb.	Wet Bulb.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp	Rainfall.	Remarks at 8.30 A.M.
June 9	30·31	E.	54	50	116	78	49	...	Overcast
,, 10	30·33	N.E.	55	52	105	70	52	...	Overcast
,, 11	30·35	N.E.	57	52	105	67	52	..	Cloudy
,, 12	30·17	E.	53	50	111	69	50	..	Cloudy
,, 13	29·98	S.E.	65	60	190	77	54	...	Bright
,, 14	29·84	S.E.	67	62	126	82	55	..	Hazy
,, 15	29·90	E.	67	62	122	83	61	...	Hazy

Notes, Short Comments & Answers to Correspondents.

EDITORIAL NOTICE.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side only of the paper.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Publisher."*

We cannot undertake to return MSS. not used.

PUBLISHER'S NOTICE.

IN order to facilitate the work of reference to the volumes of THE LANCET, we have arranged in the future to publish duplicate copies of the Index to each half-yearly volume in a form in which they may be subsequently filed or bound together.

We have had a large number of duplicate copies of the Index to the last half-yearly volume printed, and those of our subscribers who may wish to be supplied with loose copies can obtain the same (without extra charge) on making application to the Publisher of THE LANCET.

"THE ROYAL SOCIETY CONVERSAZIONE."

MR. JOHN GORHAM writes that the new reflecting kaleidoscope invented by him and referred to in an article on the Royal Society Conversazione in our last issue was invented for verifying by experiment many of the theories in optics relating to the reflection of light. Had space permitted we should not have omitted to add this, but we may take the present opportunity of saying that the experiments with this apparatus brought out in a beautiful way the grey tones from oblique white surfaces, and tints and shades of colour from oblique coloured surfaces, whilst depth, intensity and brilliancy were strikingly effected by repeated reflections.

Country.—It is not customary for dentists to charge medical men, and clearly the rule should work both ways.

"MASSAGE STONE."

To the Editors of THE LANCET.

SIRS,—I read your notice of the "Massage Stone" of Mr. F. Bennett in THE LANCET of April 29th with interest, but it has occurred to me that we need not go back to geological times to learn the use of such objects, as they are made in Indian bazaars at the present time to serve as skin scratchers or cleansers. I have before me a number of speci-

mens of these skin scratchers which I purchased this morning. They are used at the time of bathing both by men and women in this district, but chiefly for rubbing and cleaning the hard soles of the feet. A rubber of the form described by you is sometimes sold. It is made of semi-translucent porcelain and the upper surface is coloured blue, but most people here prefer the flat clay specimens which are provided by the ordinary potters at very cheap rates—viz., about six for an anna and a half. I may add that even now the conservative orthodox Hindu objects to the use of soap, instead of which he employs fuller's earth, besan or powdered grain, the Ritha nut (sapindus saponaria), and in religious ceremonies "gobar" or cow dung (dried).

I am, Sirs, yours faithfully,

T. H. HENDLEY, Surgeon-Lieutenant-Colonel.

Jeypore, Rajputana, India, May 23rd, 1893.

THE PROPER SENTIMENT TOWARDS A NEWCOMER.

To the Editors of THE LANCET.

SIRS,—May I refer to your judgment a case of that much-vexed subject—viz., medical etiquette? Having recently gone to reside in a country district, I endeavoured to conform to what I considered was strict medical etiquette by calling on the medical practitioner resident in the neighbourhood within two or three days of my deciding to practise there, as indicated by my putting up a door-plate. I should mention that this gentleman had made the first call on me before I had actually elected to practise in that part of the country, on which occasion he urged me to leave the neighbourhood. I now find myself charged on all hands with a "breach of medical etiquette," the reasons urged being that I am interfering with "vested rights" and that I ought to have asked permission &c. I should have treated the matter with the contempt which it deserves, only that I find these charges may be liable to injure me professionally and socially. Such being the case, I refer the matter to you, apologising for troubling you to this length.

I am, Sirs, yours faithfully,

June 10th, 1893. F.R.C.S.

*** We need scarcely say that we entirely agree with our correspondent as to his perfect right to commence practice in any part of Her Majesty's dominions in which he has not by voluntary contract deprived himself of the right. It would be difficult to select any spot now in which he would not interfere with what the established practitioner is apt to consider a sort of "vested right." Our correspondent seems to have acted not only within his rights but with proper courtesy, and to have deserved a better reception. He will make some allowance for his senior in possession. Threatened competition is never pleasant and men in snug country places are often less experienced in this matter than others. The resentment felt is often a sort of compliment to the competitor and in the ratio of his importance. A little magnanimity will suffice to alter and remove the feeling, which has no justification either in law or medical ethics, as the resident practitioner will doubtless soon perceive.—ED. L.

Mr. C. A. Locke.—An assurance company is entitled to demand the kind of evidence named. A medical man is entitled to be paid for a visit to verify death; but whether the patient's friends or the company should pay is a detail which the friends should settle with the company.

"ASEPTIC POCKET-CASE."

To the Editors of THE LANCET.

SIRS,—You were good enough to notice favourably in your last week's issue a case of aseptic pocket instruments made by us for Dr. Leeson of Twickenham, at the same time raising the question as to whether it would not be still further improved by the use of aluminium in the construction of the case. We trust you will not consider it out of place for us to endeavour to reply to this question from the instrument maker's point of view, in doing which we must admit that it was the original idea of Dr. Leeson that we should have used the lighter metal, but, having had some years' practical experience in the working of it, we advised him to adhere to thin German silver as being a more suitable material for this particular purpose. The objection to aluminium is that it is very soft and easily dented and would be likely to bend so as to let in dust at the edges; also it does not afford a hold for a screw and consequently the hinges and fittings could not be so securely fixed as in the firmer metal. In conclusion, we may add that we have for some time had similar cases in stock made of aluminium, but always prefer to recommend the more durable form.

We are, Sirs, yours faithfully,

June 12th, 1893. DOWN BROS.

"THE NEW DIPLOMA OF THE APOTHECARIES' SOCIETY."

To the Editors of THE LANCET.

SIRS,—In the current number of THE LANCET I notice with interest your very appropriate answer to "Inquirer" respecting the new diploma L.S.A. (Lond.). I think it only just that a distinction should be made in the title between the new and old L.S.A., since the diplomas are of different value.

I am, Sirs, yours truly,

June 10th, 1893. JUSTITIA.

ADVICE TO MEDICAL EMIGRANTS.

A CORRESPONDENT, who signs himself *Ship Surgeon*, favours us with a few hints which may probably be useful to those of our readers who may be contemplating a sojourn more or less prolonged in one or other of our colonies or in the United States. In the course of his experience the writer met with many medical men who were anxious "to take the ship home for me"—in other words, they wished to return to England, but had not the means to do so. The Cape appears to be much overdone, and in South Africa generally there is a large number of German surgeons. Canada and the United States seem to be not bad places for the medical emigrant if he will go up country. The clientèle is not numerous, but the fees seem to be good. Australia, though at present commercially depressed, affords favourable openings; but the large towns should be avoided. New Zealand, some parts of it at least, offers good chances of profitable work, especially in South Island. On the whole our correspondent has not a very favourable testimony to offer in behalf of practice far afield or at the Antipodes and is inclined to take the chances which remain for him at home.

Various correspondents who have written to us from Australia enclosing cuttings are thanked for their courtesy. Before this reaches them they will probably have seen that the matter has received our attention.

"TRAMPS, CASUAL WARDS AND SHELTERS."

To the Editors of THE LANCET.

SIRS,—Referring to the annotation under the above heading in your issue of the 27th ult., perhaps you will allow me to state that after personal inspection of many of the Salvation Army shelters I am in a position to bear testimony to their marked cleanliness as compared with common lodging-houses or casual wards. There is ample provision for washing, besides which all the bunks, mattresses and floors are washed daily. It is not true therefore—at all events with regard to the Salvation Army shelters—that "sanitary principles are almost wholly ignored." Moreover, these shelters are under the sanitary supervision of the medical officers of health and sanitary inspectors of the various districts as much as any common lodging-house. The comparative immunity from cases of small-pox traceable to any of these shelters is a proof that they are not hot beds of disease.

I am, Sirs, yours faithfully,

Harley-street, W., June 10th, 1893. HEYWOOD SMITH.

"STRAIN AS A CAUSE OF ENLARGEMENT OF THE INGUINAL GLANDS."

To the Editors of THE LANCET.

SIRS,—It may be of interest to Dr. McIntosh and others to hear that whilst attached to the Turkish army during the war I frequently met with tenderness and swelling of the inguinal glands, sometimes leading to troublesome suppuration, in young delicate soldiers, especially those of phlegmatic or strumous diathesis, brought on from strain and over-marching in mountainous country, and I can vouch that there was no venereal disease present.

I am, Sirs, yours faithfully,

June 10th, 1893. R. B. SMITH.

To the Editors of THE LANCET.

SIRS,—In reference to the letter on the above subject in your last issue I should be glad to know whether eczema round the anus has often given rise to suppuration of the inguinal glands. Some time ago I saw a case in which venereal disease was denied and could not be discovered. On further examination a patch of eczema in a weeping condition was found at the anus, and also a hard and painful cord leading up from this between the scrotum and thigh to a huge abscess in the left groin. Since then the eczema has occasionally been troublesome and there has at the same time been some tenderness of the glands in the right groin.

I am, Sirs, yours faithfully,

C. H. POWERS, L.R.C.P. Lond., M.R.C.S. Eng.

Silloth, June 12th, 1893.

During the week marked copies of the following newspapers have been received:—*Malton Gazette, Bath Argus, Westminster Gazette, Family Doctor, Ripley Advertiser, Liverpool Daily Post, Christian World, Times of India, Pioneer Mail, Yorkshire Post, Bristol Mercury, Leeds Mercury, East Anglian Times, Scottish Leader, Pittsburgh Medical Review, Bradford Observer, Dundee Advertiser, Manchester Guardian, Bombay Gazette, Madras Times, Local Government Chronicle, City Press, Hertfordshire Mercury, Musical News, Weekly Free Press and Aberdeen Herald, Reading Mercury, Mining Journal, West Middlesex Standard, Herald (New York), Eastern Daily Press, Keble's Margate and Ramsgate Gazette, Sunday Times, Morning, Builder, Architect, Guy's Hospital Gazette, Surrey Advertiser, Local Government Journal, Citizen, Scotsman, West Middlesex Advertiser, Food and Sanitation, Aberystwith Observer, Le Temps (Paris), Burnley Express, Lancaster Standard, Glasgow Echo, Evening Times (Glasgow), Indian Daily News, Newcastle Daily Chronicle, Lancaster Guardian, Newcastle Morning Herald (N.S.W.), Christian Leader Midland Evening News*

Communications, Letters &c. have been received from—

A.—Dr. Sidney Alden, London Mr. R. R. Anderson, Carmarthen.

B.—Dr. W. H. Bishop, Newcastle; Mr. Leonard A. Bidwell, London; Mr. A. H. Brodribb, London; Mr. Brew, Ballylongford; Mr. F. J. Bennett, Westbury; Mr. W. P. Brook, Herts; Messrs. Blondeau et Cie., London; Messrs. Boake, Roberts and Co., London; Bradford Medico-Chirurgical Society, Secretary of; Bradford Children's Hospital, Secretary of.

C.—Dr. T. L. Campbell, Missouri, U.S.A.; Mr. H. L. Cottingham, London; Mr. H. Cripps, London; Chesterfield Hospital, Secretary of; Cumberland Infirmary, Carlisle, Secretary of; Clerical, Medical and General Life Assurance Society, London.

D.—Mr. E. W. Duncan, Southampton; Messrs. Down Bros., London.

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REPORT OF THE LANCET COMMISSION

APPOINTED TO INVESTIGATE THE SUBJECT OF THE

ADMINISTRATION OF CHLOROFORM

AND OTHER ANÆSTHETICS

FROM A CLINICAL STANDPOINT.

CASES OF DEATHS OCCURRING UNDER ETHER. (*continued*).

48.—Male, aged 12. Excision of knee-joint. Nearly 1 lb. Pulse and respiration failed together. After operation was completed, breathing became faint, and pulse disappeared at wrist. Measures adopted were artificial respiration, hypodermics of ether, brandy, and ammonia, faradisation of diaphragm and slapping extremities. These efforts continued for 45 minutes. There had been no vomiting. Syncope. Post-mortem: All internal organs intensely congested. Heart empty, having stopped in systole. No mucus in larynx. Patient healthy, except for disease of knee. Ether used was Power's and Weightman's.

49.—Female. For strangulated umbilical hernia. Pulse and respiration failed together. Had fit of vomiting. Heart's action ceased, also respiration; tracheotomy performed and trachea sucked out, but life was extinct. ? Asphyxia or cardiac paralysis. Had weak heart at beginning of operation.

50.—For wounded artery. Pulse failed first. Wounded vessel was exposed, and pulse became imperceptible directly incision was made in skin. Operation suspended, some restorative given, pulse again felt and operation continued. Pulse stopped second time, respiration ceased, and all attempts at resuscitation useless. Cardiac paralysis, from excessive action of ether upon heart, enfeebled from loss of blood. Death, perhaps, might have been averted by preliminary transfusion. Stout, healthy man, who, in use of pruning knife, accidentally injured right carotid artery.

51.—Old woman. Removal of tumour, upper jaw (patient in sitting posture). Pulse failed first. Face had become somewhat livid from ether, but just after incision made in skin, pulse stopped, and heart's action not resumed. Paralysis of heart.

52-53.—Two cases. Removal of tumours of neck. ? Respiration. Considerable embarrassment of respiration. No blood or vomited matter to account for death.

54.—Male. Reduction of double incarcerated scrotal hernia. Contents of hernia forced up into abdomen, and patient ceased to breathe. Post mortem showed nothing to account for death, cause of death being attributed to fact that abdomen was compelled to receive more than it was accustomed to, and thus action of diaphragm interfered with. A very doubtful case as far as the anæsthetic is concerned.

55.—Male, aged 50. For removal of teeth for cancerous growth in gums and throat. Pulse and respiration failed together. One tooth had been removed when breathing became bad and pulse failed. Artificial respiration employed without success, and every means likely to restore animation used. Syncope. No sign of disease in heart or lungs to forbid use of ether. Had been an habitual smoker. Saliva swallowed of poisonous nature. Was weak from the exhausting nature of malady.

56.—Female, aged 43. On fibrous tumour of uterus. Ether given in cone. Respiration failed first. Great care taken in administration, as patient was weak from previous hæmorrhage. Patient had large goitre which became larger during inhalation. Whistling sound noticed in breathing. Just before operating, breathing ceased, face very livid. Pulse regular. Tongue pulled forward and artificial respiration. Silvester's method used, as breathing did not return; tracheotomy performed and large tube inserted for artificial respiration. This was successful for a short time, but eventually failed. A catheter was passed down the tracheal tube to inflate lungs, but in vain. Pulse was regular for some long time, but at last ceased. "Epileptiform spasm of respiratory muscles" induced probably by fright and causing asphyxia. Post-mortem: calibre of trachea somewhat diminished by projection of goitre backwards. Lungs: no pleural adhesions, pale; structure normal. Heart healthy, decolorised clot in right ventricle, black clot and fluid blood in ventricular cavity. Other organs healthy except uterus. Patient had lost a good deal of blood and was becoming weaker.

57.—Female, aged 62. Exploratory puncture of uterine fibroid. "Syncope under ether." Hæmorrhage into peritoneal cavity.

58.—Relief of inguinal hernia. Respiration failed first. Became cyanotic and respiration ceased; 5 minutes after breathing stopped, pulse 76 and strong. Tongue pulled forward and artificial respiration employed, with no avail. Post-mortem: No air in heart, in great vessels of trunk or large vessels of brain. Aorta and branches atheromatous and calcified. Abdominal aorta with large calcareous plate. Ophthalmic artery twice usual size and atheromatous. Heart enormously hypertrophied, weighing 31 ozs. Left ventricle thickened; mitral valve ossified, with calcareous plates at base. Aortic semilunar valves also ossified about base. Aortic orifice might well have been closed by valves, but mitral could not. Left lung œdematous.

59.—No particulars.

60.—Boy. For bronchocele. No particulars.

61.—Male, aged 62. Reduction of dislocation of shoulder. Ormsby's inhaler. Pulse failed first. After the operation the reduction was found not satisfactory. To complete it, the inhaler was replaced on the patient's face without any fresh ether in it. After completion and removal of bag, pallor and feeble breathing came on. Measures used were the hypodermic injection of brandy, artificial respiration, drawing forwards of tongue, and battery. Death from fatty heart combined with bronchitis and emphysema. Post-mortem: Lungs emphysematous and congested; bronchitis with quantity of mucus in tubes; in lower lobes not much air, in upper part more œdema; trachea congested with frothy secretion. Heart flaccid, right ventricle and auricle occupied by soft coagulum, great increase of fat on surface of same and very little muscular tissue, which at apex had nearly disappeared, valves slightly thickened, pericardium adherent. Death thought to be caused by "shock of reduction during semi-narcosis." (See THE LANCET, Feb. 14, 1885, p. 316.)

62.—Female, aged 20. For opening empyema for drainage. 2 oz. used. Pallor and unsatisfactory breathing. Patient was laid down; pulse at wrist imperceptible. Ammonia applied to nostrils and prolonged efforts at artificial respiration of no avail. Syncope caused by (1) patient sitting up for operation; (2) nausea, and therefore cardiac depression, due to incomplete anæsthesia; (3) shock by introduction of needle.

63.—Female, aged 40. For pyæmia, abscess in knee-joint and pelvis. ½ oz. used. Respiration failed first. Respiration suddenly ceased. Immediate and vigorous attempts taken to restore breathing by artificial means, but no recovery. Syncope.

64.—Male, aged 58. Empyema (17 minutes). Pulse and respiration failed together. For first 17 minutes breathed well. Ether then discontinued. About 15 minutes later pulse and breathing began to fail. Seemed to die from a kind of syncope. ? Syncope. No post-mortem allowed.

65.—Female, aged 10. Sounding bladder. Pulse failed first. After a few inhalations was observed to be very pale. Pulse ceased, breathing continued. Artificial respiration, galvanism, injections of brandy tried in vain. No post-mortem. Much emaciated. Seemed to be suffering from tubercular disease of kidney.

66.—Female. Extraction of tooth. After operation partly recovered, but then lapsed into unconsciousness and died.

67.—Female, aged 50. For perineorraphy. Immediately after operation pneumonia set in, to which patient succumbed. Pneumonia. Post-mortem: Fatty heart, pulmonary emphysema, chronic bronchitis with chronic nephritis.

68.—Male, adult. Small operation in mouth. No particulars.

69.—For hæmorrhoids. Respiration failed first; stopping suddenly. Heart continued beating some time after respiration ceased (¾ hour). Cerebral embolism, shock of operation, or excessive apprehension. Post-mortem: Long-standing and inflammatory disease in brain and medulla oblongata. Lungs collapsed.

70.—For abscess in neck. Post-mortem: Kidneys diseased through cystic degeneration.

71.—Male, aged 46. Syme's amputation of tuberculous ankle (about 10 minutes). Ether (administered after ½ oz. whisky had been given. Respiration failed first. In a few minutes respiration faltered, patient became cyanosed deeply, but this passed away. In another 5 minutes pulse ceased. Measures adopted for resuscitation were: hypodermics of brandy, ether, and sulphate of atropine, application of nitrite of amyl to nostrils, artificial respiration, depression of head and shoulders—with no effect. Syncope. Post-mortem: No rigor mortis; body well nourished. Lungs small; left pleura, few adhesions; right pleura, many adhesions. Heart hypertrophied, pericardium everywhere adherent, coronary arteries of small calibre, slight atheroma of aorta, mitral valve stenotic, and spleen enlarged. Kidneys: left atrophied, capsule adherent; markings indistinct; sclerosis above pyramids; pelves filled with fat. Right kidney same, both surrounded by thick layer of fat. Most striking revelation was complete adherence of both surfaces of pericardium; the heart was so fettered that it could not respond to the unusual strain thrown upon it. Was suffering from tubercular disease of tarsus of one foot. General appearance of patient bad. Aortic and mitral systolic murmurs, and heart sounds feeble. Urine contained moderate amount of albumen. Patient very nervous. Rather more struggling than usual, which closely preceded failure of pulse. Heart in condition to suffer permanent arrest of function upon any strain; and any mental or physical excitement would have been too much for it. "If more than ordinary care had been exercised to quiet patient's nervousness, the feeble heart might have emerged from its ordeal." Squibb's ether fortior used.

72.—Male. On throat. Patient was suffering from cystic degeneration of kidneys.

73.—Male, aged 8. "Caseous glands. Œdema." Ether. Pulmonary complications. Post-mortem made, but no particulars given.

74.—Male, aged 20. Scraping away granulations and opening sinuses in abscess of left leg. Clover's inhaler used. Pulse probably failed first. During operation, after breathing normally several times, deceased moaned, turned pale, ceased breathing. At same time pupils dilated. Tongue drawn out with forceps, and artificial respiration begun. Chest slapped with wet towel. Hypodermic of ether and brandy. Battery applied, and artificial respiration kept up ½ hour. All these measures were without avail. Syncope; not failure of respiration. Post-mortem: Layer of fat over chest; muscles paler than natural. Lungs healthy, but some old adhesions in right pleural cavity. Heart covered with fat, especially at apex, right side dilated and full of blood, left empty and contracted, walls of right ventricle thin, valves healthy, heart muscle pale and soft, microscopically showing fatty degeneration. Patient stout, flabby rather anæmic. Had been always healthy before suffering from abscess, which was chronic. After admission to hospital two other abscesses opened; one under chloroform, other under nitrous oxide. Passed through both operations successfully.

75.—Female, aged 44. For cancer. Pulse failed first. Sudden stoppage of pulse. Every means of artificial respiration tried, but death took place in less than a minute. Operation not begun. Patient not completely anæsthetised. Syncope. Heart examined prior to administration and found to be sound.

76.—Male, aged 46. For relief of over distended bladder. Clover's inhaler. Pulse failed first. Before operation commenced, pulse suddenly became very feeble, hardly preceptible at wrist; lips pale, breathing gasping, pupils normal. Measures resorted to were: Drawing out tongue, stimulation of cardiac area and chest, artificial respiration for ¾ hour; but pallor increased, and death took place. ? Syncope. No post-mortem allowed. Hard drinker. Had had tight stricture of urethra for 8 months, and had refused treatment. Heart hypertrophied, double aortic and mitral murmurs could be heard. Pulse feeble and irregular. Chest barrel-shaped from emphysema. Bladder enormously dilated, and urine dribbling away. Penis and scrotum swollen, and almost gangrenous from extravasation. Would have no operation without anæsthetic.

77.—Female, aged 41. Removal of intra-uterine fibroid (½ hour). Pulse probably failed first. 25 minutes after anæsthetisation it was noticed that the heart was acting feebly. About 5 minutes later death supervened. Artificial respiration maintained for 1 hour, a few weak respiratory efforts made after heart stopped. Hypodermic of tincture of digitalis (10 minims) and nux vomica (10 minims) also given. Heart failure. Patient was very anæmic, but heart, lungs, and kidneys were in good condition. Had had ether twice before for similar operations. One teaspoonful of aromatic spirit of ammonia and a tablespoonful of brandy were given ½ hour before anæsthetisation.

78.—Male, aged 50. For tumour in side. Heart examined before administration and nothing abnormal detected.

79.—Male, aged 56. Reduction of fracture of tibia and fibula. Pulse failed first. After operation had been successfully performed, heart suddenly ceased beating, then respiration stopped and patient died. Heart ceased beating 3 minutes after cessation of administration of ether. ? Syncope. Post-mortem: Lungs much engorged; flabby heart and fatty liver. Was a drunkard. After admission on account of fracture, suffered from delirium tremens for 10 days. Operation then undertaken.

Deaths remotely due to the Administration of Ether.

As in the case of chloroform so in that of ether, a certain number of fatalities have occurred while ether was being administered, or after its exhibition, which have been attributed to its effects, immediate or remote.

These "remote deaths," as we may term them for the sake of brevity, have been recorded as of about equal frequency in hospital and private practice. The deceased have been of ages ranging from 8 to 72 years, but most were over 35, and more fatalities have been recorded among women than men.

Records have reached us from various parts of England, from France and Spain, but most instances come from the United States, where this anæsthetic is used perhaps more largely than elsewhere.

The pulse appears to have failed either after the cessation of respiration or simultaneously with it, although instances are recorded in which primary failure of circulation is said to have occurred.

Operations with which Remote Deaths were Associated, etc.

Amputation of arm, of finger; about abdomen: herniotomy, lumbar colotomy, ovariotomy; extirpation of vaginal glands; for empyema; removal of tumour from upper jaw; plastic operation on upper lip; castration; forcible movement of joints about rectum; removal of teeth. With the possible exceptions of the two operations for the relief of empyema, and of the operations for the removal of the maxillary tumour, none are operations which would be regarded as rendering the use of ether fraught with especial danger or difficulty.

Of Predisposing Causes for such casualties we have but few records. Only one individual is specially mentioned as having been intemperate; pulmonary emphysema is recorded in two cases, and several more cases are mentioned in which bronchial inflammatory conditions of the lungs complicated the operation. Vomiting occurred on three occasions, and was probably the immediate cause of death.

The Causes Assigned for Death were: asphyxia, either simple or mechanical, as in the cases in which masses of food or vomit entered the air passages and produced suffocation; a case in which bronchitis supervened and proved fatal in a week; œdema of the lungs; congestion of lungs; pneumonia; cerebral hæmorrhage; surgical hæmorrhage; ileo-colitis following rectal etherisation; cardiac syncope (3 weeks after taking the anæsthetic).

The Methods of Administration were: a sponge contained in a folded towel; a sponge in a bladder; Allis's inhaler; Ormsby's inhaler; Squibb's inhaler; an extemporised apparatus for rectal anæsthesia.

The Measures Adopted for Resuscitation were simply the employment of artificial respiration, the adoption of the dorsal decubitus, stimulation of the præcordium by hot water and the internal administration of stimulants.

The Facts Elicited by Post-mortem Examination may be summarised as follows:—Circulatory System, distension of right side of heart; clot in coronary artery (said to have been 3 weeks old); fatty conditions of the heart in 3 cases. Pulmonary System: inflammation, recent in one case; lobar pneumonia; engorgement and inflammation of lungs; foreign bodies in air passages—vomit, food, blood, pus, &c. No renal lesions. In one case cerebral hæmorrhages are noted with extended atheroma present.

Series B.

1.—Male, aged 50. The patient gradually sank and died 4 hours after operation.

2–5.—Three males and one female. In each of these cases death occurred 3 hours after operation; but no particulars are given.

6.—Female, aged 8. Extraction of teeth (20 minutes). Patient

vomited, but ether resumed, when she vomited again. The face became livid; was "black in the face." She was laid on the floor, the tongue drawn forward, and artificial respiration by Marshall Hall's method commenced. She ceased breathing after a few efforts at respiration. Asphyxia was stated to be the cause of death. Post-mortem: "Mass of undigested liver firmly impacted in rima glottidis." Was highly nervous. Had no organic disease. Every care used in giving ether, and there was a due admixture of air. Patient had taken no meal for some hours. Ether quite pure.

7.—Female, adult. While lying on back under the ether, vomited, and some of the vomitus getting into trachea killed her. Asphyxia.

8.—Female, aged 48. Iridectomy. 2 oz. given in Squibb's apparatus. Inhaled ether and passed through operation well. 5 minutes after attempted to vomit, and became cyanotic and unconscious with stertor, and great perspiration. Seemed suffering from cerebral hæmorrhage. Improved 4 hours later, and became conscious, but with hemiplegia of left side, passing urine involuntarily. Next day before midnight symptoms became more serious, and death occurred next morning, 37 hours after operation. Cerebral hæmorrhage following administration of ether. Post-mortem: Large hæmorrhagic patch under arachnoid on upper surface of middle portion of left hemisphere. Vessels of left hemisphere much fuller than those of right, with numerous capilliform extravasations. Large clot in right lateral ventricle, corpus striatum and optic thalamus softened and broken down; small hæmorrhage in left lateral ventricle; extensive atheromatous degeneration of vessels at base of brain. No other organs than brain examined. Moderately stout, pale complexion; complaining of no previous sickness.

9.—Female, aged 35. For contracted knee. Ether given in Ormsby's inhaler. Passed through operation and etherisation with no untoward results, but 1½ hours later became cyanotic and pulseless with *râles* all over thorax. Symptoms came on at 2.45 P.M.: all attempts to rally fruitless, and patient died at 4.15 same afternoon. Œdema of lungs, though complete recovery from ether narcosis. Post-mortem. Œdema of membranes of brain; no thrombosis of pulmonary artery. Heart healthy, with little blood in right auricle. Lungs pale and œdematous. After operation was carried across a court in open air to ward. Whether this exposure was really the determining cause of death could not be decided.

10.—Aged 19. (20 minutes.) Operation performed, but death followed 2 hours later. Post-mortem. Bronchial mucus, pulmonary and serous effusion found. Had contracted chest, and lungs restricted by adhesions, which bound them down in all directions.

11.—Male. Amputation of finger. Vomiting; part of vomited matter went into windpipe and lungs causing suffocation. Windpipe opened and every effort made to save life. Asphyxia.

12.—Male. Amputation of arm (more than ¼ hour). Respiration failed first. Great difficulty in inducing anæsthesia. Operation very simple and very rapid. All went well till next day when patient began to cough and respiration was hurried. The asphyxia became progressively marked and in about a week the man died suffocated. Cause assigned for death: asphyxia. Post-mortem. No lesion of any organ except that the lungs were very vascular, red and inflamed. No hepatisation of lungs. The wound kept the same appearance from the time of operation to death; it did not suppurate nor did it heal; only a little serous fluid trickled from it. The patient was very fat.

13.—Male. Amputation of leg above ankle-joint: injured by gunshot wound. Ether given on a sponge in cone of folded towel. Pulse failed first. Operation was being performed when patient became cold and pulseless and sweated profusely. Respiration ceased. Measures adopted were: artificial respiration; brandy (some swallowed); clothes wrung out in boiling water to region of heart. Feeble heart sounds could be heard, but all efforts to restore animation failed. Shock, probably; *not* ether. (1) Shock of gunshot wound. (2) Of entire charge striking one part, thus being equal to a bullet. (3) Of ankle-joint being destroyed. (4) Of operation. Patient probably commenced to die when limb was separated from body.

14.—Aged 55. Removal of tumour from upper maxillary bone. Ether given on sponge in bladder. Pulse and respiration failed together. During operation breathing stopped, no pulse at wrist and doubtful whether any at præcordial region. Artificial respiration and recumbency of no effect. Hæmorrhage (Snow), but doubtful whether cause was not combination of suffocation and hæmorrhage.—(THE LANCET, Aug. 27th, 1881, p. 387.)

15.—Male. For empyema. Respiration failed first. When under influence of ether patient rolled over on to sound side. At once great difficulty of breathing set in, pus welled out of mouth, and patient was suffocated by accumulation of pus in air passages. Asphyxia. Post-mortem. Besides pus in pleura, numerous fistulous communications between bronchi and pleural cavity, the pus having found its way from the latter into the former. Ether regarded as bad anæsthetic for empyema because it exercises its lethal influence first on the lungs and causes large accumulation of mucus in throat, and both these conditions unfavourable to patient who has only one lung to lose.

16.—Female, aged 54. Reduction of dislocation of shoulder. Ether (Squibb's), 6 oz. used. After operation and return to consciousness—five minutes after operation—patient drank some water; 1½ hours later was found cyanosed and dying. Active stimulating treatment applied but patient died in another half-hour. Congestion of lungs. Post-mortem: One kidney slightly fatty, and lungs deeply congested; congestion set up by ether-vapour, and here rapidly fatal. Patient well nourished. Heart and lungs sound.

17.—Female, aged 45. For pleural effusion. Respiration failed first. When about a pint of effusion had been withdrawn, face became livid, breathing irregular and gasping. Was revived with difficulty, but seemed to quite recover. Dyspnœa and lividity returned and patient died asphyxiated. Asphyxia from heart clot. Post-mortem: Fatty heart, white clot extending from right auricle into pulmonary artery. Cancerous pleuritis and peritonitis. Had taken ether successfully for same operation a month earlier.

18.—Female, aged 49. Carcinoma of large intestine. "Asphyxia from vomit in trachea whilst under ether." Post-mortem but no particulars given.

19.—Female, aged 64. Ovariotomy. Respiration appeared to fail first. Took anæsthetic well, but 12 hours after had dyspnœa and died with congestion of lungs 17 hours after operation.

20.—Male. For anal operation. Ether given, in large quantity. Pulse failed first. Patient took anæsthetic successfully and operation was performed, but three weeks later was found dead in bed, in full rigor mortis. Syncope in cardiac diastole, due to thrombosis of coronary artery. Post mortem: Heart, left side, especially ventricle, much distended with liquid blood; right cavities less loaded; substance of heart soft and flabby. Left coronary artery obstructed by clot of blood, age about three weeks, formed at time of ether administration. Patient active, vigorous and in good spirits.

21.—Male, aged 73. For relief of right inguinal hernia (herniotomy performed). Operation lasted 25 minutes; cause of obstruction, square piece of potato swallowed unmasticated, patient being toothless. Wound healed, but uræmia, vomiting, and stupor came on, and patient died 10 days later. Uræmia, induced by giving ether, which was the primary cause of death in this and the 3 following cases. No indication of kidney trouble previous to operation. "Ether counter-indicated in all affections impairing integrity of renal function."

22.—Female, aged 43. For lumbar colotomy for cancerous stricture of rectum. Operation performed, patient being placed on her right side. Severe chill, high fever, and pneumonia of entire right lung set in, to which patient succumbed 4 days after operation. Colotomy wound had healed throughout by adhesion. Pneumonia was assigned as the cause of death. Post-mortem: Dense infiltration of entire right lung. Suffered also from chronic bronchitis. "Chronic catarrhal affections of bronchi of aged, and perhaps of infants, frequently develop into catarrhal pneumonia, terminating in death of the usually enfeebled patients in question."

23.—Male, aged 60. Castration of tuberculous testicle. Operation performed; 3 days later, chill set in, followed by fever and pneumonia. Wound satisfactory. Pulse fluttering and frequent. Respiration shallow and hurried, patient comatose. Died same day. Pneumonia was assigned as the cause of death. Post-mortem: Lobar pneumonia of right lung in stage of bloody engorgement. How far this case can be considered due to the anæsthetic seems doubtful.

24.—Male, aged 61. Inguinal colotomy for far-gone cancer of rectum. 4 days after operation, pneumonia set in and traversed left lung. Prostate and neck of bladder involved in cancerous growth, causing frequent and painful micturition, and finally cystitis and pyelonephritis, to which patient succumbed about 6 weeks after operation. The wound healed. Profuse purulent bronchial secretion noticed up to time of death. Pneumonia complicated with cystitis and pyelonephritis.

25.—Male, aged 25. Extirpation of inguinal glands. Fatal pneumonia set in day following operation. Pneumonia was the cause assigned for death. Before operation dulness over apex of right lung, due to past pleuro-pneumonia was noted. The affection reappeared on same side.

26.—Male, aged 45. Restoration of portion of lower lip. Ether (Allis's inhaler.) Respiratory tract. Small bottle per rectum (4 oz.), only ½ oz. given. After patient had been fully etherised by respiratory tract, anæsthetic continued by conducting tube, from bottle *per rectum*, bottle immersed in water at 110° to 120° F. Operation finished in 20 minutes. Patient re-acted well; 4 hours later only complained of slight discomfort about navel; 8 hours after operation went to closet; repeated this four or five times between 8 P.M. and 12 P.M. The attendant did not summon house-surgeon till he found patient had passed some bloody fluid in bed. Patient then in state of collapse, and died at 3 P.M., 15 hours after operation. Ileo-colitis, with hæmorrhage, caused by action of

ether vapour on intestinal walls, or sympathetic ganglia connected with them. Post-mortem: Lungs: slightly emphysematous, pleuritic adhesions, and slight hypostatic congestion at left apex. Heart: small quantity of fluid in pericardial sac; valves normal; post-mortem clot in right ventricle. Liver: large, firm, and pale. Spleen: normal. Kidneys: congested, capsules not adherent. Stomach: empty, distended with gas. Small intestines: upper two-thirds empty, lower one-third mucous membrane intensely congested; organ contained fluid resembling blood, and few blood clots. Large intestine distended with gas, and contained quantity of bloody fluid; mucous membrane intensely congested. Patient of intemperate habits, yet in fair physical condition. The recorder of case hitherto thought that in cases of rectal etherisation no danger was incurred, except in employing too much ether in too short a time, but was now forced to admit that there were dangers connected with it which could not be foreseen, and therefore only advised its use in very prolonged operations about mouth and pharynx.

Series C.—Deaths occurring in Hospitals.

1.—Female, 50. Colotomy. Death after 15 hours. Acute bronchorrhœa.

2.—Female, aged 58. For strangulated hernia. Ether (Clover's). Heart failed before respiration. Syncope. Post-mortem: Both lungs very emphysematous, chronic bronchitis, myocardium very fatty, straw-coloured clot in right ventricle and pulmonary artery, other cavities empty. Lunatic; had been asthmatic for years from chronic bronchitis and emphysema.

3.—Male, 56. Exploratory section for strangulated hernia. Death, after vomiting, from being moved when *in extremis*, and a few inhalations of ether. Patient had been operated on a few days previously and, as just said, was *in extremis*.

4.—Female, 35. Amputation of breast, two minutes. Pulse failed first, pulse and respiration stopped suddenly. Syncope. A soft and weak pulse and aortic regurgitation had been noted.

5.—Female. Removal of sloughing fibroid. Died suddenly, vomiting blood, 5 minutes after having been put back in bed. Operation undertaken as a last resource.

6.—Ether given per rectum. No particulars.

7.—Female, aged 32. Removal of ovarian cyst without adhesions. Ether given on towel rolled into cone. Respiration failed first. Symptoms at first favourable. After large quantity of fluid had escaped from cyst, and cyst grew smaller, respiration at once affected, as heart and lungs occupied less cramped quarters. Respiration grew shallow rapidly and in 2 minutes had ceased. Pulse failed and ceased soon after. Artificial respiration kept up 45 minutes (during which time cyst was removed and operation completed), together with hypodermic of ether and brandy, sinapisms to extremities and præcordium, heat, &c. Respiration then returned but only for ten minutes. Death caused by inhibition of respiration. No post-mortem. Possibly nervous. Tumour so large that heart and lungs were much crowded out of usual area.

8.—For ununited fracture of inferior maxilla. Death from extreme weakness.

Series C.—Deaths occurring in Private Practice.

1.—Female, Ether given in Ormsby's inhaler. Asphyxiated by inhaler.

2.—Male, aged 19. Thyroid (removal) 30 minutes. Ether (Clover's inhaler). Simultaneous failure of heart and respiration. Post-mortem: No organic disease beyond narrowing and flattening of trachea from pressure. Deaf mute.

3.—Sarcoma on side of chest (removal). Ether (Clover's inhaler). No post-mortem.

Series C.—Cases occurring in Private Practice.

1.—Male, aged 33. Abscess in mouth with carious tooth. Ether given in Clover's inhaler.[1] Respiration and pulse probably failed together. Untoward symptoms: Became cyanosed, pulseless, and respiration dropped to 3 per minute. Resuscitation: Artificial respiration—no good result; faradic battery applied, which caused sneezing; result, escape of quantity of pus from trachea, abscess having given way during ether administration.

2.—Male, aged 53. Opening pyæmic abscess in shoulder joint. Ether[2] (Clover's inhaler). Rapidly pallid very early in administration; pulse hardly perceptible; breathing arrested. Artificial respiration alone needed. Patient suffering from pyæmia; temperature 104°.

3.—A few cases. Ether (Clover's inhaler). A few cases of syncope have occurred, also of semi-asphyxia. They have invariably been restored by raising the limbs, lowering the head, pulling forward tongue, artificial respiration, slapping chest with cold, wet towel, and access to air.

[1] Danger attributed more to secondary causes than to anæsthetic.

[2] See British Medical Journal, July 15, 1882, p. 103. The reporter says: "At the time of death I regarded it as one of asphyxia, due to the inhaler, and the condition of the heart confirms, it seems to me, this view."

UNTOWARD CASES OCCURRING DURING THE ADMINISTRATION OF ETHER.

These are the cases in which, although happily a fatal termination was obviated, yet symptoms arose which gave rise to grave alarm and necessitated resort being had to measures adapted for resuscitation.

The sexes were attacked equally, the ages ranged from 2 to 70 years; the women affected were, as a rule, somewhat younger than the males. Of the reports which have reached us more refer to private than to hospital practice.

Records of untoward cases have come to us from various parts of England, Germany, and the United States, most being derived from this last region, where, as above stated, ether is very largely given.

FAILURE OF PULSE AND RESPIRATION.

In most cases the pulse and respiration failed together, or respiration ceased before cardiac failure; but in very many instances no record was kept of this important point.

NATURE OF OPERATION.

For diseased bone; for removal of breast or abscission of a tumour from the breast; upon the chest to secure permanent operation in a case of long-standing empyema; for dislocations; on the eye, excision of globe, iridectomy, on eyelid; removal of submaxillary glands; genito-urinary tract, catheterism, perineal section, for phimosis; on neck, scraping tubercular glands; tracheotomy; for examination of diseased hip; other examination; in four cases operation not commenced.

The only Predisposing Cause mentioned in these cases is the occurrence of vomiting in three patients, and a temperature of 104° Fahr. in another; intemperance is noted in one case. Notes are, however, in some instances given, referring to the state of the patient's health at the time of the occurrence. Thus, debility; mitral incompetence; extensive valvular disease; uterine neuralgia are mentioned, and in one case we are told that there was extreme excitation of the vascular system succeeded by collapse.

METHOD OF ADMINISTRATION.

On a towel: on a sponge covered with flannel; on a sponge covered with leather: in a cone; various forms of inhaler the make of which is not specified; in Ormsby's inhaler; in Clover's inhaler; by the rectum. These facts are of especial value, for with the exception of the two inhalers above-mentioned and possibly of the cone, the method employed was clearly not the one most likely to achieve rapid and quiet etherisation. The furious struggling and distress which accompanies some methods of exhibiting ether would go far to account for many of the "untoward systems" ascribed to the ether. In the rectal etherisation no mention is made of the use of the anteceptor, which has been shown to be so essential for the safety of this method.

METHOD ADOPTED TO EFFECT RESUSCITATION.

The following measures were used; artificial respiration by various methods; electrical excitation; inversion of the body; rolling to left side; various forms of stimulation, both locally, as by heat or cold affusion; and internally by hypodermic injections of atropin; rectal injections of beef-tea and brandy; inhalation of amyl sprinkled on lint and held to the nostrils; pulling out of the tongue; tracheotomy.

RECORD OF CASES.

Series B.

1.—Female, aged 10. Removal of wen from eyelid. Ether given on cone. The untoward symptoms were: Epileptiform condition, with complete insensibility. The operation was performed. The measure for resuscitation adopted was suspension of the inhalation. The reporter of this case says: "Condition alarming in appearance, but has never within my knowledge had any serious result." The patient crying violently when cone put over her face.

2.—Female, aged 16. For excision of eyeball. Ether given in a leather inhaler. Pulse failed first. Pulse from beginning was feeble, and grew imperceptible; respiration became very shallow. Resuscitation: Rolling on left side for a moment; slapping over cardiac region; artificial respiration. Before battery could be applied, pulse began to act feebly, and at length recovered. Operation performed, and patient recovered. This patient was weakened by recent illness. This case was recorded to show that ether does not always stimulate the heart's action.

3.—For establishing and making permanent opening in thorax for drainage. Suddenly turned livid when pleura between 9th and 10th ribs was reached. Resuscitated with extreme difficulty. No particulars of measures resorted to are stated.

4.—Dangerous symptoms occurred, but no further particulars given.

5.—Aged 8. Iridectomy. Untoward symptoms: When operation was completed, and dressing terminated, great pallor of the face was observed. Resuscitation: A few manœuvres were required to put an end to this condition.

6.—Young boy. Pulse and respiration failed together. Untoward symptoms: Became very pale; pulse at wrist could not be felt, and breathing seemed suspended. Resuscitation: Artificial respiration and other means; after much perseverance animation restored. Ether (for local anæsthesia) used in mistake for sulphuric ether. This was supposed to have caused the alarming symptoms.

7.—Female, aged 14. For necrosis of tibia. Ether, 1 oz. given on a sponge in leather cone. Pulse failed first. Untoward symptoms: Became suddenly blue in face; jaws closed with spasm, and pulse could not be felt. Resuscitation: Pulling out tongue; turning on left side; artificial respiration. Patient gave few gasps, vomited, and at last recovered.

8.—Male, aged 44. Removal of left eyeball (about 7 minutes). Ether given in a conical sponge lined with flannel. Respiration failed first. Untoward symptoms: As bleeding tissues were about to be compressed, no hæmorrhage observed. Lips and whole face pale, and respiration had ceased. Resuscitation: Artificial respiration commenced. Pulse very feeble. Tongue drawn forwards. Patient made 1 or 2 efforts to breathe. Nitrite of amyl (4 min. on lint) given, and artificial respiration continued, but patient soon breathed naturally, and quickly recovered consciousness. Patient strong, healthy looking. Had slight mitral regurgitant murmur, and suffered occasionally in his breathing after hard work.

9.—Male, aged 11. Removal of sub-maxillary glands. Ether, 9 oz. given on sponge inhaler. Untoward symptoms: Vomited twice; after operation respiration and pulse weak, and later almost failing, this state lasting more than 4 hours. Pupils contracted to pin's point, body cold and clammy. Resuscitation: Artificial respiration; friction; hot flannels; ammonia to nostrils; faradic current over phrenic nerve, and to diaphragm; enemata of beef-tea and brandy; application of hot flannels, which last improved pulse and respiration.

10.—Female, aged 14. Examination of diseased hip, and applying splint. Ether given in an American inhaler (? cone). Untoward symptoms: Respiration shallow; face became blanched. Inhaler removed, but pulse failed, though heart still beating. Resuscitation: Pillow removed from under head, and chin thrown upwards; flipping with cold wet towel; pulse and respiration restored. On moving joint, patient showed signs of pain, so little more ether given at intervals. Pulse did not fail, though respiration feeble. Operation performed, and 20 minutes from beginning of inhalation, patient awoke.

11.—Female, aged 14. Same patient as above case, but different occasion. Reduction of re-dislocation of hip. Ether given in an inhaler, 1 oz. 2 dr. Respiration failed first. Untoward symptoms: Breathing shallow; face pale, but pulse good. Resuscitation: Inhaler removed; as respiration almost imperceptible, flapping epigastrium with cold wet end of towel practised; this somewhat revived respiration. Small dose more of ether given, as patient woke up. Respiration continued shallow throughout operation, but circulation never failed, because administrator was careful to remove inhaler when state of respiration required it.

12.—Female. Removal of tumour from breast. Untoward symptoms: At end of operation, face pale but pulse good. When ether discontinued, breathing faint, finally ceasing; pulse persisted. Resuscitation: Artificial respiration for a few moments restored natural breathing.

13.—Male, aged 36. Catheterism for rupture of urethra. Untoward symptoms: Spasm of glottis before anæsthesia was very profound. Resuscitation: Operation had been attempted previously under chloroform, but patient took it badly and operation was abandoned for the time. Tracheotomy had to be performed. The tracheal wound, still open, proved of great service; spasm disappeared; by closing tracheal wound respiration went on through glottis. (See also under Chloroform Cases.)

14.—Male, aged 70. Reduction of dislocation of left shoulder (four minutes). Ether given in Ormsby's inhaler. Pulse and respiration failed together. Untoward symptoms: After operation pulse and respiration ceased together, just before having been regular. Patient became leaden in colour. Resuscitation: Artificial respiration, cold water dashed over head. Patient made spasmodic gulp; battery applied to diaphragm, another gulp, then gradual recovery. Patient fairly robust, with moderately firm muscles. Accident occurred five weeks before and surgeon who attended never reduced luxation.

15-16.—Tracheotomy for diphtheria. "Danger appeared imminent." No further particulars.

17.—Female. Relief of uterine colic. Ether given on a towel, two dr. (after several doses morphia given hypodermically). Respiration and pulse probably failed together. Untoward symptoms: Ashy pallor overspread face and respiration ceased. Resuscitation: Vigorous slapping, thumping, and cold affusions; also two hypodermics (atropin sulph.). After resuscitation the uterine neuralgia still persisted and was finally relieved by chloral hyd. and potassium bromide.

18.—Male, aged 2. For phimosis. Pulse and respiration failed together. Untoward symptoms: Appeared in good condition shortly after operation, but became increasingly pale, then pulseless, with cessation of breathing—in state of collapse. Resuscitation: Was completely restored under artificial respiration. Note by reporter: Patient not fully under ether. Nervous and vascular systems highly excited—afterwards a reaction, condition of collapse.

19.—Female. Removal of breast. Untoward symptoms: Sudden spasm with serious asphyxial symptoms set in; and there was seen large bronchocele which had not been spoken of by patient, which may have contributed to this state.

20.—Child. Untoward symptoms: Pronation of fore-arm and wrist, inversion of thumbs, opisthotonos by boring head back in pillow, ending in convulsion. Convulsion not fatal, patient resuscitated.

21.—Male, adult. Respiration failed first. Untoward symptoms: *Tetanic setting of inspiratory muscles of chest*, viz., no air entering, respiration with diaphragm failing to fill lungs; mouth and larynx being free, tongue out, and position good. Respiration ceased, but pulse continued. Resuscitation: Artificial respiration (Silvester's method) and chest again inspired. No stridor at glottis. Operation completed without ether; good recovery.

22.—Female. Removal of cystic tumour of breast. Respiration failed before the pulse. Untoward symptoms: *Simple exhaustion*; breathing quiet, but both diaphragm and intercostals working, mouth open, and tongue out. After several imperfect respirations, deathly pallor over face, ears, neck, with dilatation of pupils, falling jaw, and cessation of breathing. Resuscitation: Artificial respiration and stimulation restored life. Tumour removed without ether. Made slow but good recovery. Very feeble.

23.—Male. Incision and perineal section for retention and urinary extravasation. Pulse and respiration failed together. Untoward symptoms: Breathing and pulse ceased. Resuscitation: Revived by artificial respiration and stimulation, and operation performed without ether. Died 10 days later. Post-mortem: Extensive and old valvular disease of heart.

24.—Male. Removal of sub-maxillary gland. Ether (30 grm.) given per rectum by long tube. Suddenly cried out: "I am bursting," and abdomen was found to be considerably distended. The ether was discontinued as the man was now insensible and operation begun. For several hours, the patient remained in a state of absolute coma, but eventually came round without any signs of rectal or other injury. Complete absence of cardiac disturbance.

25.—Male, aged 30. Scraping and removal of tuberculous lymphatic glands of neck. Ether given in Ormsby's inhaler. Untoward symptoms: Ether failed to produce complete loss of consciousness or sensation. The small operation done with difficulty on account of exaltation and struggling of patient. Chloroform refrained from, as it produced dangerous collapse on a former occasion.

26.—Ether per rectum. Untoward symptoms: Alarming symptoms supervened, because assistant allowed vapour to pass in too rapidly. Resuscitation: Excess of vapour immediately withdrawn by means of large rubber tube passed into rectum and colon; escape of vapour being aided by elevating pelvis and by pressure on abdomen.

Series C.—Cases occurring in Hospitals.

1.—Male, aged 60. Ether given by Clover's inhaler. Patient had bronchitis, which was the cause of the trouble. Dorsal decubitus posture.

2.—Male, aged 60. Amputation of gangrenous toe. Ether given in Clover's inhaler. Untoward symptoms: Patient remained delirious 3 days, and then died. Broken-down drunkard. Dorsal decubitus posture.

3.—Male, aged 40. Cock's operation. Ether given in Ormsby's inhaler. Respiration failed first. Untoward symptoms: Patient stopped breathing. Resuscitation: Artificial respiration; patient recovered, having at first exaggerated Cheyne Stoke's respiration.

4.—Male, aged 44. Kelotomy. Ether (Ormsby's inhaler). Untoward symptoms: Sick before and during operation, but not afterwards. Though anæsthetic given successfully, this case, untoward in so far that pneumonia of right base of lung supervened 4 days after operation. Patient recovered.

5.—Female. Respiration and pulse failed together. Untoward symptoms: Breathing almost ceased and pulse failed, face became blanched. Was on the point of dying, not from asphyxia, but weak heart action.

6-11.—Respiration failed first in each case. The untoward symptoms arose from vomiting and embarrassed respiration. Resuscitation: Artificial respiration and stimulants.

DEATHS UNDER NITROUS OXIDE.

NITROUS OXIDE.

The reports of some thirteen cases of deaths have been recorded, but as an examination of the cases themselves will show, it is very doubtful whether these fatalities can be ascribed to the influence of this anæsthetic. The youngest patient was 10 and the oldest 71. Most deaths have taken place in private practice, and records have come from Canada, France, England, Scotland, and the United States.

The pulse is stated to have failed before respiration in one case and once simultaneously with it.

In all cases the operation was for the extraction of teeth or stumps, and in three instances the operation had not been commenced at the time of administration.

Intemperance is stated in one case to have been a possible adjuvant cause; in another the patient was dying from cancer; and in a third the case was complicated by vomiting.

The Causes of Death, as assigned by the reporters, were as follows: asphyxia; fright, the patient not being under the influence of the gas at all; congestion of the lungs, which was noticed two hours after the administration, and eventually proved fatal; the last stage of phthisis; respiratory failure through impaction (1) of a broken gag in larynx, (2) of a molar tooth in larynx; syncope (simple) in three cases, from incomplete anæsthesia and shock of tooth drawing, from tight lacing forcing the heart out of position by the distended stomach.

The Measures adopted for Resuscitation, as far as recorded, were: artificial respiration, electric stimulation of phrenic by galvanic current, by faradaic current; prone position; stimulation by rubbing, slapping, cold affusions; drawing forward of tongue; tracheotomy.

Post-mortem examination of persons dying under Nitrous Oxide:

(1) Lungs tubercular—badly diseased.

(2) Heart fatty, atheromatous aorta, thickening of valves, right heart distended, left empty. Lungs engorged. Dark fluid blood between scalp and periosteum. Dura mater adherent, serous effusion into ventricles.

(3) Molar tooth impacted in larynx.

(4) Lungs and kidneys congested, adherent pleuræ, thickening of aortic valve.

(5) Fatty degeneration of heart.

DEATHS UNDER OR AFTER NITROUS OXIDE.

1.—Male, adult. Extraction of teeth. After the extraction of the teeth the patient rapidly sank, and died in two hours. Congestion of lungs. Post-mortem: One lung diseased, other almost consumed by disease. Patient, it was presumed, died because lungs were in last stage of phthisis.

2.—Adult. Extraction of teeth. No particulars given, except that it was stated that the patient was healthy.

3.—Female, aged 17. Dental operation. After inhaling gas, was taken ill, although she did not take sufficient to produce insensibility. Died the following day. Was of strong and robust physical constitution and apparently in good health before inhaling gas.

4.—Female, adult. Extraction of front tooth (loose). Patient inhaled gas three times in succession, each time taking but a small quantity, being equally fearful of the anæsthetic and of the pain of operation. Finally, choosing to submit to operation without gas, teeth were extracted. Immediately fainted, head dropping sideways. Face became livid, then purple. Battery and artificial respiration resorted to, but death took place in 13 minutes, face becoming blanched after death. Nervous shock from dread of pain and fear of fatal effects from inhaling gas. Verdict, at inquest, of jury composed of medical men, stated death to be due to asphyxia from inhaling gas; but not enough was inhaled to produce such a result. Post-mortem appearances: Conflicting evidence given—(1) one lung more engorged than other, but healthy. (2) One lung congested. (3) Lungs congested, right lung bound by old pleuritic adhesions. Upper lobes of right lung pneumonic.

5.—Female. Dental operation. Post-mortem: Lungs in a state of asphyxia.

6.—Female, aged 38. Extraction of tooth. Pulse said to have failed first. At beginning of administration patient's pulse rapid and less full. It was determined to operate without gas, but as patient could not bear the pain, gas again given. After operation face became livid and features began to swell. Though efforts were made to restore animation, she breathed only two or three times, and a few moments after her pulse ceased beating. Inhalation of nitrous oxide gas inducing paralysis of respiration, though after the first administration there was rapid pulse with diminished volume. Cause of death said to be the impaction of a portion of a broken gag in the larynx. [For controversy on the cause of this death see THE LANCET, vol. i., 1873, pp. 212, 245, 253.] No post-mortem allowed. Believed to be of good health; of plethoric habit.

7.—Dental operation. No particulars given.

8.—Male. Removal of stumps of teeth for alveolar abscess. Pulse failed first. Operation commenced before complete anæsthesia was obtained, and patient begged several times for more gas, but seems never to have been completely under its influence. After operation, was observed to be very quiet. Cold water dashed over face, and windows and doors thrown open. Face and neck livid, eyes fixed and open, pupils widely dilated. Hands cold and pale, but feet and legs quite warm. Cold affusions; artificial respiration; friction revulsions to feet and legs; galvanic battery—all unavailing. "Death from syncope" (verdict at inquest). Post-mortem: Dark fluid blood between scalp and periosteum; dura mater very adherent; membranes full of serous fluid, and veins intensely congested; ventricles filled with same fluid. Lungs dark-coloured and congested. Heart enlarged, soft and friable; left side quite empty, right full of dark-fluid blood; deposit of fat in interventricular furrows; aorta coated with atheromatous deposit; aortic and mitral valves thickened. Liver enlarged; in state of fatty degeneration. Patient was suffering from alveolar abscess caused by carious stumps, and could get no rest at night.

9.—Male, aged 10 or 11. Extraction of temporary teeth. Towards close of operation gag slipped, and mouth closed, patient became partly conscious, assuming natural colour, when he took deep inspiration, and immediately showed symptoms of asphyxia. Raising hand to neck, he attempted to tear away clothes as though they were loose. Laying patient flat, and slapping across the back were of no avail. Tooth could not be felt. Medical man fetched, who arrived in 7 minutes, but patient was then dead. Tracheotomy at once performed, without avail. Post-mortem: Missing lower molar found firmly fixed in larynx with fangs uppermost.

10.—Male, aged 57. Extraction of teeth. Extraction about to be begun, when patient seemed breathless—even lifeless. Tongue was drawn forward, water dashed on face, and artificial respiration begun and carried on for ½ hour. Syncope. Post-mortem:—Brain: dura mater firmly adherent to calvarium. Heart: visceral pericardium presented few small whitish patches of fibrinous thickening. Valves normal, except soft, miliary, fibrinous vegetation on one of the aortic valves. No fatty degeneration. Lungs: right firmly bound to chest wall; lower lobe collapsed and atrophied; left large and slightly congested. Kidneys congested. Had a cancerous enlargement of tongue, which at post-mortem was found not to involve larynx. This patient was in a terribly shattered state of health at time of occurrence, the cancer having reduced him almost to a state of collapse.

11.—Male. Dental operation. Nitrous oxide given without legal authority. Syncope was assigned as cause of death. The administrator was tried by 8th Chamber of Paris Tribunal for homicide, in causing the death of the patient, and fined 600 frs., and ordered to pay 3000 frs. damages.

12.—Female, aged 71. Extraction of teeth, etc. The pulse and respiration failed together. At the commencement of the inhalation patient's respiration noticed to be insufficient. When patient became unconscious, and teeth had been removed, etc., she suddenly changed colour and became livid, while heart and respiration ceased. Syncope caused by impairment of respiration through tight lacing and over distension of stomach, both acting on a heart diseased and weakened by fear. Patient suffered from fatty degeneration, and was aware of it. She had breakfasted 5 hours before taking the gas, but digestion was wholly suspended by extreme terror at operation. Addicted to excessive tight lacing.

13.—Male, aged 24. Extraction of tooth. As soon as tooth had been extracted patient gave a gasp and expired. Artificial respiration, with no effect. Syncope, due to incomplete anæsthesia. Heart and lungs examined previous to inhalation, and considered sound. The purity of the nitrous oxide was tested shortly after the accident.

UNTOWARD CASES.

We next pass to the reports of three "untoward" cases recorded as having occurred under the influence of nitrous oxide gas.

1.—Female, aged 30. Extraction of tooth. After a few inspirations became unconscious; pulse ceased; breathing stopped. Pulling forward tongue; artificial respiration; breathing at length became normal.

2.—Female, adult. Extraction of tooth. Acute and convulsive movement during narcotism, but recovered. Walked 400 yards to station and was in train when seized with faintness, pallor, and active convulsion. Was put to bed unconscious. Next day insensible, pupils widely dilated, pulse irregular and weak, breathing feeble. Was sometimes convulsed. Breath with peculiar fœtor; odour of sulphur alcohol. Was treated as for hysteria; recovery not perfect for several weeks.

3.—Female. Removal of 2 molar teeth. Dentist who operated. Respiration failed first. Administrant noticed that patient (a little girl) was not breathing. Artificial respiration, which was successful in bringing patient round. At the critical moment administrator was too much occupied in operating to notice sudden stoppage of respiration. He thought that had he been operating unassisted, he would certainly have lost his patient.

DEATHS OCCURRING UNDER METHYLENE.

METHYLENE.

The anæsthetic which for some years has been known as methylene or bichloride of methylene, and is usually believed to consist of a mixture of chloroform and alcohol, has given rise to several deaths. The deaths have been more frequent among males, and between the ages of 16 and 51. Deaths are reported from various parts of England, and have occurred mainly in hospital practice. In most cases the pulse failed before the cessation of respiration; but nearly as frequently the pulse and respiration are reported to have failed simultaneously. The deaths have occurred during a variety of major and minor operations which need no further mention, and in two cases before the commencement of the operation. No special symptoms or complications are reported which might presumably have predisposed to the fatality. The causes assigned for death were: asphyxia; collapse; collapse due to mental perturbation; exhaustion and hæmorrhage; failure of heart; failure of respiration; shock; reflex shock; syncope; syncope due to imperfect anæsthesia syncope following violent struggling. The methods of administration were: A "flannel bag"; "inhaler," the variety not being named; leather inhaler; leather and flannel inhaler (? Rendle's mask); Rendle's mask; on lint; Junker's inhaler. The measures adopted for resuscitation were: artificial respiration; electrical stimulation; inversion (partial); usual methods of stimulation; traction on the tongue; rolling patient on to his side. The post-mortem examinations revealed the following conditions:—(1) Congested lungs; (2) Fatty heart, congested lungs; (3) Hypertrophy of left ventricle, right distended; (4) Heart dilated and fatty, lungs œdematous, kidneys congested.

1.—Male, aged 39. For malignant disease of left antrum. 1½ dr. given in an inhaler. Pulse failed first. Head gradually fell back; pulse, already feeble, ceased; no stertor or lividity. Laid horizontally, and galvanism and respiration practised with no result. (1) Through feeble condition and hæmorrhage; (2) mental depression; (3) want of expiratory power increased by bandage round abdomen to prevent struggling. The tumour extended upwards, and pressed on malar bone, producing slight ecchymosis under eye; it also protruded from nostril.

2.—Male, aged 40. For double iridectomy. Pulse and respiration failed together. Became very violent; struggles restrained; turned blue; struggling ceased; methylene removed; operation on right eye completed. During operation on left showed signs of feeling pain. After 3 minutes respiration became shallow and catching, radial pulse could not be felt. Angles of mouth blue. Was turned on left side. A few gasping inspirations. Galvanic current tried for 10 minutes. Artificial respiration for 1 hour. ? Syncope. Post-mortem: Heart, on surface of left ventricle about 20 small spots of ecchymosis; left ventricle empty and contracted; right contained fluid blood. Lungs congested.

3.—Male, aged 41. Amputation of finger. Pulse and respiration failed together. When operation was performed, patient's head had fallen on one side, eyes were upturned, and breathing and pulsation had ceased. Every means taken to restore animation without effect. The reporter says: "As patient was in a great state of excitement at having to undergo operation, methylene acted on nervous system, producing instant death." Post-mortem appearances *nil*.

4.—Female, aged 44. For cancer in breast. Flannel bag, small quantity. After 2 or 3 convulsive gasps patient expired. Artificial respiration and other means for restoration used without success.

5.—Male, aged 51. Reduction of dislocation of arm and shoulder. Pulse and respiration failed together. Face became livid and breathing suspended; pulse failing also. Measures resorted to were: Drawing forward tongue, giving of ammonia, and application of galvanism for ¾ hour without effect. Operation not performed. Post-mortem: Heart large and flabby, but no other disease.

6.—Male, aged 48. For fistula in ano. 2 dr. (leather inhaler). Pulse and respiration failed together. During inhalation the patient became very rigid, with complete opisthotonos. Was turned on left side, became very livid, respiration ceased, pulse imperceptible. Measures resorted to were: Artificial respiration (Silvester's method); galvanism to diaphragm and phrenic nerve; brandy injection per rectum—all with no avail. Pupils contracted when first asphyxiated, after 3 minutes became dilated, and remained so. Asphyxia was assigned as cause of death. Post-mortem: Lungs congested; lining membrane of trachea and bronchi studded with ecchymoses; right pleura adherent to ribs. Heart large and flabby, covered with fat, valves healthy; some fibres, with commencing degeneration, but no fat globules; heart empty. Blood fluid, and very dark. Aorta atheromatous. Liver large and fatty.

7.—Female, aged 25. Passing probe through obstruction in lachrymal sac (2 minutes). 3 dr. given in leather inhaler covered with flannel. Pulse failed first. Breathing became loud and stertorous, with palatal stertor, and nostrils flaccid. Pulse at wrist failed, and then ceased suddenly. Respiration continued, but failed suddenly. Tongue dragged forward, and artificial respiration (Silvester's method). Lower limbs and pelvis raised from couch to cause gravitation of blood to the brain. Face and breast slapped with wet towel, and ammonia applied to nostrils. Injection of brandy and ammonia per rectum. A few inspirations, but no return to life.

8.—Male, aged 27. Iridectomy. Breathing became slow and stertorous. Artificial respiration, galvanism, &c., tried, but respiration became more irregular, face more livid, and patient died. Post-mortem appearances *nil*, except that blood was dark and fluid.

9.—Male. Amputation of foot above ankle-joint. Methylene given on lint. Before the dressing of the stump was completed it was observed that the patient was pulseless, and that respiration had ceased. Artificial respiration was attempted without success.

10.—Male, aged 40. Death was perfectly sudden and inexplicable. In apparently perfect health.

11.—Female, aged 27. Ovariotomy for cyst of the right parovarium (10 minutes). Methylene (4 dr.) given on Junker's inhaler. Clinical assistant greatly experienced in giving anæsthetics. Pulse failed first. After 10 minutes, during which 4 dr. were inhaled without producing complete anæsthesia, radial pulse suddenly stopped; respiration continued for 3 minutes after pulse ceased beating. Patient pale, and slightly livid. Measures used for resuscitation were: Lowering of head, drawing forward tongue; artificial respiration (Silvester's method), with free admission of fresh air from window; rubbing lower limbs with hot flannel; application of ammonia to nose, and subcutaneous injections of solution of musk—all of no avail. No information given by the necropsy as to the cause of death. Post-mortem:—Heart: flaccid, of proportionate size to the body, valves and endocardium normal; fluid, bright-coloured blood, mixed with air-bubbles contained in ventricles; a few small, soft clots of fibrine in auricles, lining membrane of aorta delicate and normal; no evidence of any pathological alteration in heart, which was normal in its structures; air-bubbles in ventricles being post-mortem production. Brain: dura mater normal, meninges and substance of brain pale, anæmic, and œdematous. Small quantity of mucus in trachea, mucous membrane of which, as well as of larynx and pharynx, pale. Lungs: both free; anterior portions pale; posterior regions with moderate quantity of blood; both œdematous; tablespoonful of clear serum in pleural cavity, and about 100 centimètres of similar serum in pericardiac cavity. Patient anæmic and weak, on which account particular precautions and care needed in giving anæsthetic. The remainder of the narcotic fluid was handed over to Professor Dr. Hofmeister for analysis.[1] The result of this analysis proved that the "so-called chloride of methylene was chloroform diluted with absolute alcohol." No decomposition of the constituent chloroform of the preparation could be discovered. The fluid was obtained from London.

12.—Male, aged 16. Extraction of tooth. Administered by a dentist. Pulse failed first. Patient's (a boy) head dropped, he turned pale and gasped for breath; restorative administered, and medical man summoned, but death took place. Syncope.

13.—Male, aged 19. Suture of right ulnar nerve. Methylene given in a leather mask. Pulse failed first. Patient struggled violently from commencement, and was anæsthetised with difficulty. At commencement of operation patient became cyanosed, heart's action having suddenly ceased, and pulse giving no indication of danger. Syncope. Post-mortem: Right ventricle full of blood, left ventricle slightly hypertrophied and contracted; valves of heart quite healthy. Death also considered due to "fatal inhibitory impulse excited by the incision, acting upon the heart during semi-narcosis" (THE LANCET, Feb. 14, 1885, p. 316). Patient had been injured 6 months previously by an explosion of gunpowder. Some stones had penetrated the arm, and right ulnar nerve was divided. A month before the fatal dose he was put under methylene, which he took well, for the extraction of the stones.

14.—Male, aged 15. Amputation of leg for necrosis of tibia, &c. Pulse and respiration failed together. Struggled violently and became very cyanosed. Ceased struggling and face became leaden-hued; pulse and respiration stopped. Measures adopted were: Legs raised, head lowered, artificial respiration begun and carried on half-hour, brandy and ether injected, hot flannels over heart. Interrupted current one side over heart, other over left side of neck. At beginning of artificial respiration patient gave two deep-drawn gasps, otherwise no sign of life. Sudden syncope. Post-mortem: Lungs con-

[1] For verbatim account of the analysis see British Medical Journal, July 21, 1883, p. 104.

gested and œdematous at bases; heart, ventricles dilated, thin walls; heart-substance light coloured, soft, friable; endocardium pale; no valvular lesion; ventricles in diastole, with fluid blood; kidneys large and congested; spleen enlarged, with cicatrix of old gumma; liver small, hard, cirrhotic. As to what share the inhaler used might have had in causing death see THE LANCET, 25 Oct. 1890, p. 898. Patient had necrosis of tibia and disorganisation of left ankle joint. Gave history of syphilis 16 years previous. Some necrosis of right tibia, and nasal septum almost destroyed.

15.—Removal of cancerous growth (20 minutes). The operation was partly completed, the patient having been under the anæsthetic for 20 minutes.

16.—Female, aged 27. Extraction of tooth. About 3 dr. of bichl. methylene. After a few inspirations the pulse was noticed to fail, and although various measures were used it was found impossible to resuscitate her. Death took place from engorgement of the lungs and asphyxia. Post-mortem: Heart healthy.

17.—Female. The operation was a gynæcological one. Died before commencement of operation. No post-mortem.

UNTOWARD CASES OCCURRING UNDER METHYLENE.

These are too few to need any analysis in this place.

1.—Infant. Operation on eye. Sudden syncope. Symptoms passed off quickly under appropriate treatment.

2.—Male, aged 17. Extirpation of eye-ball (8 minutes). Methylene given in Junker's inhaler. Pulse and respiration failed together. After operation and removal of inhaler patient gave feeble sigh, head rolled on one side, and he ceased to breathe; face blanched, and no pulsation at carotids or heart. Flapping epigastrium with wet towel, pulling forward tongue, laying patient on left side. Patient then pushed over operating table till head almost in contact with floor, and in this position artificial respiration performed, while tongue held forward with forceps. After 5 minutes a feeble sigh and faint pulsation. Gradually patient recovered completely.

3.—General cases of females. Ovariotomy. In some cases bronchitis said to have occurred as a result of the anæsthetic. Recorder refers to several cases, no particulars given; lays stress on use of pure drugs.

NATURE OF OPERATIONS NOT MENTIONED.

1.—More than one case. Methylene given in Junker's inhaler. Nitrite of amyl: inversion; and artificial inspiration.

2.—One or two cases. Methylene in leather case and towel covering it. Artificial respiration, successful after one minute's use.

3.—Female, aged 27. Extraction (time very short). Chloroform and methylic alcohol (4 pts. to 1). Pulse. Whilst quickly breathing she suddenly became pale; the pupils dilated, and cold sweat came on forehead. Tongue pulled forward and artificial respiration used, when she slowly revived. Her mother died under chloroform.

THE A.C.E. MIXTURE.

In the few cases recorded which, from references in current literature, we may assume do not represent the true mortality under this mixture, no especial analysis seems called for, nor is special reference to the individual cases necessary.

Untoward Cases: The methods of giving the anæsthetic were a cone, folded lint, on a towel.

In one case the patient was anæmic, in another the heart was dilated.

Respiration appears in the majority of cases to have given out before the heart.

1.—Female, aged 32. Exploratory incision into right loin for kidney disease. Pulse failed before respiration. Suddenly the heart failed, and death ensued. Syncope, no sign of asphyxia. Post-mortem: Both kidneys full of abscesses. No organic disease of heart. Death due in large measure to exhausted condition of patient. Patient suffered from hectic fever and profuse purulent discharge from urinary passages.

2.—Female. Forcibly straightening the knees. A.C.E. given in two doses. As patient was recovering from A.C.E. attention was called to her condition. As failure of heart's action feared, nitrite of amyl and strong ammonia applied to nose and cold applications to forehead. Artificial respiration kept up ¾ hour. Operation was finished. Syncope. In very bad health, had not been able to walk for five years. Had ulcers on her legs and stiffness of knees, for which operation was being performed on this occasion. No second medical man was present at the time of the accident.

3.—Male. For skin disease (lupus). The respiration appeared to fail first. Died suddenly during administration. Asphyxia. The patient was a heavy drinker.

4.—Male, aged 50. Opening fistula in ano (a few seconds). A.C.E. given on cone. Respiration failed first and quite suddenly. Died on the first cut being made.

5.—Male, aged 72. Enucleation of eyeball. Pulse and respiration failed together. Before becoming fully anæsthetised he stopped breathing; pulse ceased. Artificial respiration and galvanic battery. Patient rallied, but operation had to be abandoned. Was suffering from senile dementia. Had enlarged heart and chronic Bright's disease.

6.—Respiration failed first. Artificial respiration.

7.—No particulars.

8.—Male, aged 12. Respiration failed first. Respiration ceased completely; pulse good; pupils not dilated; no change in colour. A.C.E. was carefully administered 4 days after chloroform. (See Chloroform Cases.)

9.—Male. Iridectomy on both eyes. Alcohol, ether, chloroform. Pulse and respiration failed together. Became suddenly pale, deeply insensible; pulse and respiration very defective. Lint with a few drops of nitrite of amyl placed over mouth, then deep inspirations, flushed face, quick pulse, and return of sensibility. Patient, young man, hydrocephalic, inherited syphilis.

Cases occurring in Private Practice.

1.—Male. For wound of scrotum. Respiration failed first (in 2 minutes).

2.—Female, aged 65. Vascular growth of urethra (5 minutes). A.C.E. given in a cone. Pulse failed first; pulse became flickering; respiration unimpeded. Tongue drawn well out of mouth; hypodermic of ether and brandy; artificial respiration. Patient had dilated heart; was very ill after the anæsthetic; the operation had to be given up. The operation had not been commenced when the heart failed.

3.—Female, aged 32. Hæmorrhoids. A.C.E. (cone). Pulse failed first. As the finger was stretching the sphincter pulse failed; the lips became very pale. Hypodermic of brandy was given, but without result. Patient was much blanched from loss of blood; operation was put off.

4-5.—A.C.E. given in folded lint. Respiration failed first. Artificial respiration tried without result.

6.—A.C.E. (towel over frame). Asphyxiated. Artificial respiration; pulling forward tongue; lowering head, and raising arms and feet; successful.

BROMIDE OF ETHYL.

1.—Female, aged 25. Battey's operation (over 1½ hour). Rapid breathing and vomiting. Second attack of vomiting at end of 40 minutes with severe straining. On 3 occasions opisthotonos, with twitching and rigidity of muscles and limbs and rolling of eyes. No marked dilatation of pupils. Recovered quickly from anæsthesia, but had retching and vomiting. Complained at once of violent pain in head. Was given ¼ gr. morphine hypodermically. The dose repeated in an hour. During the night the symptoms were nausea; retching, diarrhœa, and suppression of urine. Death took place 21 hours after operation, after convulsions and delirium. The diarrhœal discharges and also breath smelt strongly of bromide of ethyl. Uræmic poisoning induced by bromide of ethyl (probably). Post-mortem: Kidneys, microscopically, interstitial connective tissue slightly increased; swollen and coarsely granular. Epithelia in tubules and narrowed central calibre—sign of acute nephritis. 2½ oz. bloody serum in peritoneal cavity, and 3 dr. in Douglas's pouch below retroverted uterus. Patient subject to epileptic fits.

2.—Male. For stone in bladder. Died as soon as first incision was being made, and respiration becoming affected. No marked cyanosis. All efforts for recovery unavailable.

DEATHS OCCURRING UNDER ETHIDENE DICHLORIDE.

1.—Male, aged 29. Pulse probably failed first. Died before commencement of operation. Failure of heart from fatty degeneration whilst inhaling the bichloride of ethidene previous to operation; misadventure. Post-mortem held.

2.—Male, aged 45. For incision and insertion of drainage tube for empyema. Ethidene. Pulse and respiration failed together. Pupils became widely dilated. Measures adopted were: Artificial respiration; stimulants to heart: (1) slapping cardiac region with hand; (2) by needle and galvanic current. ? Syncope, or shock. Post-mortem: Trocar, with cannula, inserted, and 72 oz. pus withdrawn. Right lung adherent to ribs. Heart: right auricle and ventricle with much dark fluid blood; tricuspid valve admitting 4 fingers; left ventricle empty. Right lung collapsed; pleura thickened; 10 oz. pus in cavity; lung much engorged with blood; pyramidal abscess in lung surrounded by patch of pneumonia. No fatty degeneration. Operation painful and prolonged, but danger great when lung diseased.

3.—Male, aged 26. Extraction of foreign body from right eye. Ethidene dichloride. Pulse probably failed first. Operation performed, and almost at once pulse became feeble and patient very pale. Head was lowered, tongue drawn forwards, artificial respiration, nitrite of amyl to nostrils, and inversion—all with no result. Artificial respiration was carried on ½ hour. Syncope. Post-mortem: Heart flabby; walls thin; valves healthy; aorta with fatty patches; heart muscle with extensive granular degeneration. Lower lobe of right lung deeply congested. No cardiac murmur detected before operation, but sounds at base not distinct.

MIXTURES OF CHLOROFORM AND OTHER ANÆSTHETICS.

MIXTURES OF CHLOROFORM AND ETHER.

Several deaths have been reported as occurring under various mixtures of chloroform and ether. Usually alcohol is added as in the well-known A.C.E. mixture, or is present as a preservative in the chloroform used, and so enables the two bodies choloform and ether to mix.

Such casualties have occurred in Australia, Canada, England, Ireland, United States.

In the large majority of cases the pulse was noted as having failed before respiration; once only did respiration stop first, and in two cases the two ceased simultaneously.

The operations in course of performance were some trivial, some severe; but it seems unnecessary to specify them.

With the exception that vomiting twice complicated the case, no circumstances are recorded which would point to any predisposing cause for syncope or danger under the anæsthetic.

The Causes assigned for Death are: Asphyxia from entrance of vomit into windpipe; "paralysis of heart" occurring in an alcoholic; respiratory failure due to pulmonary phthisis; "to fear before the operation"; shock, the result of imperfect anæsthesia.

The prevailing method of administration appears to have been dropping the mixture either upon lint or upon a napkin.

Post-mortem examinations:—

1. Congestion of lungs.
2. Phthisis.
3. Atheroma of aorta—adherent pleuræ.

DEATHS FROM MIXTURES OF CHLOROFORM AND ETHER.

1.—Female, aged 40. Ligaturing radial artery. Ether (2 parts) and chloroform (1 part) 3 dr. (sponge). Pulse failed first. Pulse ceased, respiration ceasing very shortly afterwards. Galvanic battery and artificial respiration; also brandy enemata; these endeavours kept up for 1 hour, tongue was pulled out.[1] The cause assigned for death was paralysis of fatty heart. Post-mortem: Lungs: bronchelic inflammation with mucus in bronchial tubes, slight emphysema. Heart small, some fatty degeneration. Liver and kidneys soft and fatty. No condition of disease sufficient to endanger life, yet no organ thoroughly sound.

2.—Female, adult. Extraction of tooth. Ether 60 per cent. and chloroform 40 per cent. 2–4 dr. Anæsthetic given by a dentist. Died from breathing chloroform. Post-mortem: Neither ether nor chloroform detected by analysis in liver, spleen, and kidney, or in the blood.

3.—Male, aged 33. Amputation of finger for gangrene. Ether and chloroform (towel held square). Pulse failed first; while breathing still good. Cold affusion on face, breathing became laboured, and then ceased. No return of pulse. Every possible means of resuscitation used with no effect. "Paralysis of heart," was addicted to liquor, the cause assigned for death.

4.—Male. Removal of crushed finger. Ether and chloroform. Respiration probably failed first. While under operation the patient suddenly gave two deep inspirations, when breathing suddenly ceased. Cause assigned for death was syncope.

5.—Male. Tracheotomy for removal of multiple tumours from larynx. Chloroform and ether. Pulse failed first. Pulse suddenly stopped, respiration ceased; lips and face turned blue. Application of air, ammonia, and artificial respiration ineffectual; tracheotomy performed quickly, and artificial respiration kept up ½ hour; galvanism also applied with no avail.

6.—Male, aged 10. Straightening knee-joint. Chloroform and ether. Operation half performed, when patient rose, vomited freely, lay down and died in 10 minutes, in spite of all efforts to resuscitate him. No post-mortem. Heart and lungs considered normal as far as could be discovered.

7.—Female. Extraction of tooth (1½ minute). Mixture of two-thirds chloroform and one-third ether. Four dr. used. Pulse and respiration failed together. The pulse failed and respiration ceased without asphyxial symptoms. Was not fully anæsthetised. After tooth had been extracted became hysterical, then rigid, with dilated pupils. Measures resorted to were: Rubbing, application of strong ammonia, artificial respiration. Post-mortem: Heart, walls of aorta thin, otherwise healthy; Lungs: posterior dependent portions quite dark; in upper lobes of both a rare, smaller, cheesy nodula. Had taken chloroform, ether and gas several times before, both severally and in combination. Both ether and chloroform tested and found pure.

[1] See Med. Times and Gazette, Oct. 6, 1866, p. 437.

8.—Male, aged 13. Straightening leg flexed at right angle (division of hamstrings). Chloroform and ether. Tendons having been divided and anæsthetic discontinued, the leg was extended, but directly after the countenance changed. Ammonia was applied to the nostrils, and the patient was inverted, with no result; he gave a gasp and died. "Shock rather than anæsthetic." Sudden extension of tissues at back of leg and sudden rupturing of adhesions in knee-joint may have produced quite enough pain and shock to account for death, unless the brain entirely paralysed, which was doubtful. These remarks apply to case in which death took place under chloroform given for same operation.[1]

9.—Male, aged 8. Removal of two molar teeth. Chloroform and ether (chloroform more than 3 gr., ether freely used), two napkins used in succession. Pulse and respiration failed together. After operation, patient became partly conscious, and endeavoured to get rid of some blood from his mouth. A shadow passed over face, which became livid. Pulse and breathing stopped. Efforts to restore animation fruitless. Syncope was the cause assigned for death. Patient healthy and well nourished, but timid. Chloroform was from a first-rate maker's.

10.—Removal of nail of great toe. Chloroform and ether (on lint). Pulse failed first. When the operation was completed pulse had ceased, and all efforts to restore animation failed. Cause assigned for death, syncope.

11.—Male. Amputation of great toe. Chloroform and ether. The pulse probably failed first. At no time of operation was patient thoroughly under the influence of the anæsthetic. At conclusion his breathing was natural. Suddenly gave a gasping sigh and expired. Pulse. Syncope was said to be the actual cause of death. Examination of patient gave no reason to suspect any visceral disease.

12.—Female, aged 45. Examination of abdomen. Chloroform and ether. Respiration. Breathing failed, face livid. Post-mortem. Tubercular peritonitis. Phthisis at right apex of lung. Heart healthy.

13.—Male, aged 38. Removal of cancer of tongue. Chloroform and ether. Respiration failed first. Shortly after commencement of administration slight duskiness noticed and respiration ceased. Artificial respiration and inversion tried in vain. Soon after artificial respiration begun, shallow respiration made with spasmodic twitching of lower jaw. Post-mortem. Slight atheromatous change at commencement of aorta. Lungs slightly adherent posteriorly. Liver enlarged and fatty. Of alcoholic antecedents. Was afraid of anæsthetic especially and operation. Thought his heart unsound. Examination of heart showed nothing unusual, except rapidity of action.

14.—Female, aged 28. Ovariotomy. Chloroform and ether. Given by a house surgeon. Respiration failed first. Respiration ceased when the abdomen was flushed with water, which was probably rather cold. Very weak.

15.—Male, aged 68. Hernia (strangulated umbilical, huge) (½ hour). Ether and chloroform (4 to 1 parts) (Clover's smaller apparatus). Pulse failed first. After failure of heart, respiration lasted some little time. Failure of heart. No post-mortem; but heart suspected to be dilated and very feeble. Exceptionally fat (17 stone), only 5ft. 6in. in height.

DEATH REMOTELY DUE TO THE ADMINISTRATION OF ANÆSTHETIC.

Female, aged 53. Colotomy for obstruction of bowel. Chloroform and ether. One of resident medical officers gave the anæsthetic. After patient had been inhaling for two or three minutes began to vomit, then suddenly appeared to be choking, and ceased to breathe. Usual methods without success. Asphyxia. No post mortem particulars. Stercoraceous vomiting occurred three days after admission to hospital.

UNTOWARD CASES OCCURRING WHEN CHLOROFORM MIXED WITH ETHER WAS GIVEN.

The following cases, although of great interest, are too few to require any special mention or survey in detail; we will, therefore, simply present them as they appear in summary:

1.—One case recorded. Chloroform and ether. Respiration and pulse failed together. After two inspirations pulse stopped beating, and respiration entirely ceased. Artificial respiration kept up and strong ammonia given.

2.—Female, aged 55. Ether and chloroform given on two separate occasions. Showed untoward signs on first, and became collapsed on second occasion very seriously. Not given for long on either occasion, but on second only fully recovered after twelve hours' careful attention.

[1] See Brit. Med. Journ., Nov. 11, 1876, p. 627.

8.—Female, aged 34. Midwifery: forceps. Half-hour. Chloroform and ether (folded napkin). Respiration failed before the pulse.

4.—Male, aged 12. Anchylosis of right knee-joint. Chloral, chloroform, 7 gr. chloral; (Esmarch's mask); 15 gr. (later Junker's apparatus). Tumour at knee-joint also found; while this was being examined patient gave cries of pain which showed narcosis not to have been very deep. Suddenly heart stopped together with respiration. Battery applied to phrenic nerve; pulse became fuller, and patient began to respire, and cried out. Administration of chloroform stopped when untoward symptoms came on. During the preparations for applying the apparatus for stretching the limb pulse and respiration suddenly stopped again. Measures adopted were: Renewed application of battery to phrenic nerve, insufflation down windpipe, artificial respiration for ½ hr. by the various methods—with no avail. Post-mortem: Heart: Left ventricle contracted; full of thin fluid blood; no fatty degeneration or congulation; Lungs: Left lung, red colour, but at top caseous mass size of bean. Right lung paler than left, adherent. Examination of heart and other organs revealed nothing abnormal. Chloral, chloroform had a very small quantity of alcohol added.

5.—4 cases. Cfr. Charité Amalen, Jhg. XI.

6.—Male, aged 15. Circumcision. Chloroform 2 dr. A.C.E. (Skinner's inhaler). Pulse and respiration failed together. At first touch of knife patient raised hands, as if conscious. Pupils dilated enormously. Face became congested; upper limbs in chronic spasm, like in epilepsy. In 15 seconds pulse and respiration failed completely. Measures adopted were: Subcutaneous injection of ether; nitrite of amyl; cold affusion; artificial respiration (when this employed pupils would contract), and galvanic battery. Syncope was the cause assigned for death.

7.—Male, aged 14. Rectifying spontaneous laxation in left hip-joint. Chloroform, ether, alcohol in the proportion of 100:30:30.

8.—Female. Incision of breast for mammary abscess. Chloroform 8 pts.; spirits of turpentine 1 pt. Pulse and respiration failed together. Sudden spasm; pallor; difficulty of breathing; cessation of pulse. Every effort persisted in to restore animation. Syncope was the cause assigned for death. Post-mortem appearances *nil*. Had shortly before been anæsthetised by similar agent, but containing more turpentine.

CHLOROFORM FOLLOWED BY OTHER ANÆSTHETICS.

Deaths in cases in which chloroform was given at first, and the anæsthesia was maintained by the use of ether.

It will readily be seen that these cases are very different from those in which the two anæsthetics were exhibited combined as a mixture. In the last case the physiological effect produced is somewhat that of chloroform, while when chloroform is given first, and is followed by the use of ether, the physiological effects which, in some ways, are antagonistic of these two substances, appear in succession. Thus the depression which many observers have referred to as following the use of chloroform would, when ether was given, be replaced by a stimulating effect, one which might, it is believed, prove highly detrimental when the circulatory system was severely taxed and unable to respond to any sudden stimulation.

The deaths have occurred in individuals between the ages of 21 and 48, and are reported from England and the United States.

In the large majority of cases the pulse failed before respiration.

The operations being performed at the time of the fatalities were of no unusual kind.

No predisposing or complicating conditions existed in these cases.

The Causes assigned for Death were: asphyxia; "failure of respiration"; syncope.

The Methods of Administration were:—Chloroform given on lint, followed by ether given in a felt cone; flannel cap for chloroform, followed by Clover's ether inhaler; chloroform given, but method not named, followed by ether from an Ormsby's inhaler.

Measures adopted for resuscitation were artificial respiration; electric stimulation by faradic, by galvanic currents; inversion; laryngotomy; stimulants, external-cold affusion, flagellation with wet towel; "mechanical stimulation of the heart"; injection of ether hypodermically; rectal injection of brandy; drawing forward of the tongue.

Post-mortem examinations;

1. Heart dilated, fatty, valves diseased, aorta and other arteries badly atheromatous, lungs engorged with blood.

2. Heart and vessels diseased (fatty, atheromatous); valves thickened, incompetent.

3. Do. do., aortic incompetence. Kidneys fatty.

4. Heart fatty, valves diseased, kidneys contracted.

A case is appended which seems to be one in which the death was only remotely the result of the anæsthetic.

DEATHS FROM CHLOROFORM FOLLOWED BY ETHER.

1.—Female, aged 45. Removal of fatty tumour from back (8 minutes). Chloroform 1 dr. (lint), then ether (sponge in felt cone). Pulse failed first. Pulse became irregular. Ether then given. Pulse became regular and fuller for a few seconds, then stopped suddenly. Respiration then ceased; face became a dusky red. Measures resorted to were: Drawing forward tongue and artificial respiration for ½ hour; at same time galvanism, one pole over left clavicle, other over heart and at epigastrium. Chest struck with wet towel and brandy injection (4 oz.) per rectum. All these means failed to re-establish action of heart. Syncope. Post-mortem: Lungs gorged with blood. Pericardium covered with layer of fat and containing small quantity of fluid. Heart covered with layer of fat; ventricles dilated, containing little fluid blood; valves atheromatous but competent; pulmonary artery and aorta with patches of atheroma. Patient fat; pulse regular, heart sounds normal, rather feeble.

2.—Female, aged 21. Amputation of right leg above ankle. Chloroform (3 or 4 minutes); ether (2 or 3 minutes). Chloroform 2 dr. (on lint), followed by ether (on sponge in felt cone) 2oz. Pulse failed first. Became blue in face and pulseless at wrist; lips white and heart's action not felt. Measures resorted to were: Artificial respiration, removal of bandage from limb; cold affusion; flipping with wet towels; application of interrupted current to pericardium. Heart never beat again. Pupils contracted throughout attempts at resuscitation. Patient moribund 2 minutes after ether was begun. Syncope. Post-mortem: Heart: friction patches, no pericarditis; wall of right ventricle thin, of left thick; mitral valves thickened; at junction of anterior cusp of mitral valve with wall of ventricle was small ulcerated patch; aortic valves thickened; two decolorised clots in left ventricle, commencing atheroma of aorta. In right kidney remains of small impacted embolus. Clot in femoral and popliteal artery. Had had rheumatic fever, suffering great pain owing to commencing gangrene of foot due to embolism of popliteal artery. Some thought a mitral *bruit* could be heard on auscultation.

3.—Male, aged 26. For irreducible inguinal hernia. Chloroform followed by ether. Respiration failed first. Respiration became noisy and laboured, and patient turned very cyanotic. Tongue dragged out, and colour and breathing improved till end of operation, but though no further dose given, he relapsed again. Measures employed were: Artificial respiration, and then laryngotomy, but both useless. Pulse good till end. Asphyxia. Post-mortem: Kidneys large and fatty; liver fatty. Aortic valves dilated, and probably incompetent, but no degeneration of heart-muscle. Patient very stout (20 stone nearly), with double aortic murmur. As hernia was source of serious risk, operation determined on after due consultation.

4.—Female. For diagnostic purposes. Chloroform followed by ether. Died from the influence of the anæsthetic. Had suffered for 2 years from symptoms probably due to a uterine polypus, which was removed.

5.—Female, aged 48. Removal of scirrhous tumour of left breast. Chloroform (2 or 3 minutes); ether (1 minute). Chloroform (open inhaler), followed by ether (Ormsby's inhaler). Pulse failed first. Slight change in colour. Became blue in face; pulse ceased to be perceptible, but respiration lasted a minute. Measures adopted were: Inversion; mechanical stimulation of heart; galvanism; ether injection. Artificial respiration kept up ½ hour. Syncope. Post-mortem: Fatty heart, and granular kidneys. Felt great alarm at prospect of operation. Heart carefully auscultated; pulse regular, and no suspicious sounds.

6.—Female, aged 30. On vesico-vaginal fistula. Chloroform (a little), followed by ether (Clover's inhaler) 2 oz. Pulse failed first, and mucous membrane of lips seemed blanched. Respiration shallow and infrequent, and pulse ceased. Artificial respiration carried on some time, and means used to stimulate heart, but patient did not rally. Syncope. Post-mortem: Heart: All valves, except pulmonary, diseased. Kidneys contracted, granular. Death therefore considered due to embarrassment of weak and diseased heart by reason of position during long operation, combined with effect of ether-vapour on lungs.

DEATH REMOTELY DUE TO ADMINISTRATION OF ANÆSTHETIC.

1.—Male, aged 28. Amputation for compound fracture of right leg. Chloroform followed by ether. Stomach full of food; vomit followed by deep inspiration; trachea and larynx filled with half-digested food, so that even tracheotomy did not restore power of breathing. Asphyxia.

2.—Female, aged 46. Senile cataract (1 minute). Chloroform followed by ether. Respiration shallow, but there was struggling. Pulse feeble, not intermittent. Slight lividity of cheeks and forehead. Chloroform removed and ether given. Other means for restoring circulation were tried, but in vain. Post-mortem: Heart flaccid, empty; mitral valve contracted, aortic valve incompetent. Kidneys fatty and granular. Extremely fat and of slow intelligence. Had shortness of breath, but not known to suffer from organic disease.

3.—Male, aged 15. High amputation of thigh. Chloroform followed by ether. Given by the house-surgeon. Pulse failed before respiration. The only symptom detailed was sudden stopping of the pulse. The cause of death was cardiac failure. Patient was sinking from profuse suppuration.

UNTOWARD CASES.

1.—Female, aged 10. Removal of scar and suppurating strumous gland (4 minutes chloroform, 20 minutes ether). Chloroform followed by ether (American (gridiron) inhaler). Breathing slow, face pallid, pulse became worse and worse. Fresh air admitted to room; hot brandy-and-water given in teaspoonsful every 3 or 4 minutes which restored pulse, patient at length taking it voluntarily.

2.—Male, aged 57. For operation for disorganisation of metatarsal phalangeal joint of great toe of left foot. Chloroform (Skinner's inhaler) followed by ether. Given by a house-surgeon. Respiration failed before the heart. Patient was got under without much struggling and operation was about to commence when house-surgeon noticed that respiration had ceased. The pulsation in the femoral was then found to have ceased. The head was depressed and tongue drawn out, and artificial respiration (Silvester's method) maintained about 28 to the minute. This was continued about 4 minutes, no pulse at femorals being apparent. Four drops of nitrite of amyl from a capsule freshly broken on lint applied to patient's nose. Colour in patient's face and pulse at femorals returned almost immediately and operation was continued under ether. History of three distinct attacks of gout.

CHLOROFORM FOLLOWED BY A.C.E.

1.—Male, aged over 70. Gastrotomy for impassable œsophageal stricture. Chloroform (lint) followed by A.C.E. (lint). Under chloroform pulse so irregular that operation was discontinued. A.C.E. substituted for chloroform and operation successfully completed.

2.—Male. Ligature of femoral for inflamed aneurism of popliteal (over 1 hour). Chloroform (lint) followed by A.C.E. (lint). Under chloroform pulse so irregular that operation was discontinued. A.C.E. substituted for chloroform and operation successfully completed.

ETHER FOLLOWED BY CHLOROFORM.

1.—Male. Dressing injury to thumb. Ether first, chloroform substituted, small quantity. After a few inspirations patient died. Syncope. Post-mortem: Fatty degeneration of heart, with valvular disease. Weakly, with organic disease; had been invalid for several years.

2.—Female. Removal of large cancer mass from right breast (20 minutes). Ether substituted by chloroform. At close of operation, sudden lividity. Tongue drawn well forward and artificial respiration. Patient died in about 3 minutes. Breathing never became stertorous. Syncope. Patient fairly nourished, nervous temperament, no indication of cardiac disease.

3.—Male, aged 60. Removal of tumour from lower jaw. Ether followed by chloroform (Clover's inhaler); 1 gr. morphia given before ether subcutaneously. When operation completed patient had good pulse; respiration slow; pupils contracted to pin's-point; profuse sweating. Two hours later no consciousness. Died with symptoms of narcotic poisoning. Post-mortem appearances *nil*.

4.—Male, aged 30. Stretching sciatic nerve for sciatica. Ether followed by chloroform (Clover's inhaler). Pulse and respiration failed together. On being given ether the patient struggled violently; chloroform then given, and almost at once he turned pale and both pulse and respiration ceased. Artificial respiration kept up half-hour in vain; as last resource heart punctured and aspirated. Operation never begun. Death probably due to syncope possibly induced by violent efforts of patient under ether.

5.—Male, aged 19. Removal of necrosed bone from leg. Ether, afterwards (at patient's desire) chloroform. At commencement of operation became pallid and heart's action could not be felt. Under prompt measures cardiac and respiratory restoration occurred, but stopped after 3 or 4 minutes in spite of artificial respiration for half-hour. "Syncope produced by action of chloroform-vapour upon heart."

ETHER FOLLOWED BY ETHER AND CHLOROFORM.

1.—Female, aged 28. For abscess in throat (abscess caused by pin being lodged in throat). Ether, followed by ether and chloroform. Respiration failed first. Ether first given, but as patient took it badly, none given for 1 hour. Then ether given and some chloroform. Breathing became bad. Patient laid on floor; artificial respiration and galvanism used, which partially restored pulse and respiration, also enemata of brandy, milk and eggs given, and warm bottles applied. Patient rallied, but died next day. Inflammation of lungs, accelerated by chloroform. Post-mortem: Bases of lungs showed signs of recent pleurisy. Left lung pneumonic, breaking down in ragged, sloughy patches. Mucous membrane about epiglottis and upper part of pharynx inflamed. Chloroform given against wish of patient, as she stated before her death. Before her death she was for some time delirious.

2.—Female, aged 45. Examination of uterus for large uterine polypus (10 minutes about). In 3 doses (1) ether; (2) ether and chloroform; (3) chloroform (2 dr. chloroform used). Pulse failed first. Breathing suddenly loudly stertorous, face cyanotic, and pulse at wrist ceased, pupils being slightly dilated. Tongue was drawn well out of mouth, flipping face and body with cold water, and artificial respiration at once begun, which latter was kept up for 1 hour. Patient rallied for brief period, but sounds of heart could not be detected. Right external jugular vein prominent, and was opened, blood flowing in jet at once. Galvanism to heart, enema of brandy, turning body on side (Silvester's method) and raising trunk with head low, all tried. Post-mortem: Much fat in anterior mediastinum. Pericardium normal. Muscular fibres of right ventricle hidden by deposit of fat. Left ventricle empty; right contained no clots; blood quite liquid. Mitral valve with small circular patch of induration; 4 to 6 bead-like bodies of lymph on central aortic valve. Heart 14 oz. Microscopically, fatty infiltration of muscular fibres, but no fatty degeneration of fibres. Polypus (size of child's head) attached by pedicle to fundus of uterus. Cysts in right ovary. Cessation of catamenia, followed by uterine hæmorrhage, at intervals of 2 to 6 weeks, for 2 years; anæmic appearance. Had lost flesh about a month (Dec. 25, 1879–Jan. 24, 1880).

UNTOWARD CASES OCCURRING WHEN ETHER WAS GIVEN, AND WAS FOLLOWED BY SOME OTHER ANÆSTHETIC. SERIES B. (*Journal*).

Female, adult. Plastic operation in perineal region. (1) Chloroform, (2) ether, (3) chloroform and ether. (1) Inhaler, (2) handkerchief. Pulse wavered and stopped; restored by cold affusions. Pulse again stopped, and face became cold. Tongue drawn out; ammonia applied to nostrils, artificial respiration (Silvester's method). All these failing, faradisation tried. Gradually breathing, and then pulse restored.

UNTOWARD CASE, ETHER FOLLOWED BY CHLOROFORM.

Male, aged 37. Blind fistula. Ether followed by chloroform. Pulse and respiration failed together. Simultaneous failure of pulse and respiration; face livid. Dorsal decubitus; artificial respiration; struck with wet towel; nitrite of amyl; tongue pulled forward. Patient was first anæsthetised with ether, which he took for 10 minutes from a Clover's inhaler, and showed no untoward symptoms. He was then turned on his left side, and given chloroform on folded square lint, covered with green protective (oil silk), 1 dr. being used. In 10 minutes more, another 1 dr. was given, and the incision made. Patient seemed to shudder, and pulse and respiration stopped.

UNTOWARD CASES, OCCURRING DURING THE ADMINISTRATION OF ETHER, FOLLOWED BY CHLOROFORM. (*Journals.*)

1.—Male, aged 62. Radical operation for inguinal hernia. Ether followed by chloroform. Spasmodic coughing with cyanosis, in spite of hypodermic of morphia. Coughing rendered operation impossible under ether. Chloroform substituted, and operation satisfactorily concluded.

2.—Aged 26. Incision of relapsing perityphlitic stercoral abscess (ether 20 minutes). Ether (Ormsby's inhaler) followed by chloroform. Neither tolerance nor relaxation induced. Change to chloroform produced desired state, and operation performed.

3.—Aged 39. For laryngo-fissure for removal of endo-laryngeal tumours. Ether followed by chloroform. Alarming spasm of glottis with cyanosis, and imminent suffocation. Chloroform given, resulting in pleasant and undisturbed anæsthesia; tumours removed.

UNTOWARD CASES UNDER A MIXTURE OF ETHER AND CHLOROFORM FOLLOWED BY ETHER.

1.—Male, young adult. Operation on eye. (1) Ether and chloroform

(sponge); (2) chloroform (towel). Pulse and respiration failed together. After ether and chloroform had been given, respiration and pulse failed, but as speedy recovery took place, operation was proceeded with, but patient was too restless to allow of it. Chloroform (pure) then given, and eyeball removed. Suddenly bleeding ceased, became white, lips blue and pallid, pupil of remaining eye dilated. Pulse and breathing stopped. Artificial respiration and beating with wet towel persisted in to great length. At last, livid hue turned to red; this followed by slight gasp; still further efforts, and patient breathed and pulse came. Healthy and active young farmer. One eye destroyed by injury; it was acutely inflamed, hopelessly lost, and affecting the other. Made perfect recovery. A third medical man was present helping, otherwise patient's life would probably not have been saved.

2.—Ether (Clover's inhaler), chloroform (lint). Respiration failed first. Several times has seen respiration stop, but resort to artificial respiration has rallied patient. Attributes this to allowing the patient partly to recover and then suddenly giving a lot of chloroform.

3.—Jaws (excision of) (under 20 minutes). Ether, morphia.

4.—Removal of lymphadenomatous glands from right of neck (40 minutes). (1) A.C.E. given on lint, followed by (2) chloroform given on lint, followed again by (3) A.C.E. given on lint. Pulse and respiration failed together. A.C.E. first given, but oozing of blood occurred; then chloroform given; but on patient turning blue, A.C.E. re-administered. After 40 minutes, patient became quite white, pulse and respiration both failing. Injection of ether; this followed by semi-inversion and artificial respiration; further injections of ether. Patient fairly recovered in 2 minutes.

5.—Male, aged 28. Excision of knee joint for tuberculous caries. Chloroform, ether, and alcohol (Billroth's mixture), *i.e.*, chloroform, 3 parts; ether and alcohol, each 1 part (50 grammes). Symptoms of imminent asphyxia came on quite suddenly. Artificial respiration (Silvester's method); recovery after 10 minutes. Patient otherwise healthy.

DEATH FROM METHYLENE AND ETHER.

Female, aged 62. Ovariotomy. Methylene and ether (on single fold of towel). Pulse failed before the respiration. Pulse suddenly stopped, pupils became dilated. Respiration ceased. All efforts at restoration useless. Artificial respiration (Silvester's method); ammonia, slapping chest, and cold affusions tried. Inhalation of methylene and ether, causing syncope. Post-mortem did not reveal cause of death; all organs healthy, except ovary. "The systolic murmur must have been hæmic." During life a systolic murmur at base of heart had been detected.

DEATH FROM METHYLENE FOLLOWED BY ETHER (METHYLATED), FOLLOWED BY METHYLENE.

Male, aged 56. Removal of diseased bone from leg. In 3 doses: (1) Bichl. methylene, (2) ether (methylated), (3) bichl. methylene. During last dose, patient struggled greatly; then had epileptiform convulsion, followed by tonic spasm; this relaxed, breathing became stertorous; pulse failed. (?) Syncope. No post-mortem allowed. It was thought that the convulsion might have been caused by cerebral hæmorrhage.

DEATH REMOTELY OCCURRING FROM NITROUS OXIDE AND ETHER.

1.—Female, aged 55. For strangulated femoral hernia. Well under in 4 minutes. Nitrous oxide and ether (Clover's apparatus). Pulse and respiration failed together. Went well under in about 4 minutes, without previous excitement. Taxis was then applied, when almost immediately patient became pale and recommenced vomiting stercoraceous matter. Respiration became weak and pulse imperceptible. Air admitted and artificial respiration done. Enema of brandy, 3 oz. given. Strong ammonia applied to nostril and ammonia injected into right median basilic vein. Patient died in about 10 minutes from commencement of alarming symptoms. Post-mortem: Stercoraceous matter found in trachea and right bronchus. Right side of heart and large veins full of dark fluid blood. Ventricular walls thin and flabby, cavities slightly dilated. Left ventricle empty. Atheromatous patches on arch of aorta.

2.—Female, aged 21. Gas followed by ether. Respiration and pulse failed together. Respiration and pulse stopped soon after commencement of administration. Post-mortem: Pleuritic effusion on right side, with displacement of heart to left. Large hydatid cysts of liver and uterus, and suppuration and dilatation of ureters. Very anæmic; weak pulse.

3.—Female, aged 43. Removal of sloughing fibroid uterus. Nitrous oxide, then ether; less than ½ oz. (Clover's inhaler). Respiration failed first. Operation over and ether discontinued. Respiration noticed to be failing, and it grew feebler. Artificial respiration of no avail. Pulse gradually failed, and ceased in 7 minutes. Some cyanosis. Brandy also given per rectum. Post-mortem 4 days after death. Old pleural adhesions, and no other gross lesions. Had taken nitrous oxide and ether 2 days previously.

DEATH—BROMIDE OF ETHYL AND CHLOROFORM.

1.—Female. Dental. Bromide of ethyl (1 oz.) with chloroform (4 or 5 drops). Patient recovered completely from effects of anæsthetic, and felt quite well during remainder of day. Next day, however, she died. Dentist charged in court with causing death of patient. A commission of medical experts directed to report upon the matter.

2.—For carcinomatous infiltration of right nostril. Nitrous oxide and ether. Respiration failed first. Sudden asphyxia arose, which ceased after a few chest compressions. Ether inhalation begun again, and fatal results seemed impending. Tracheotomy restored patient, to all appearances dead.

3.—Male, aged 54. Lumbar colotomy. Nitrous oxide and ether. Heart: Moribund at time of operation.

THE CONCLUSION OF THE COMMISSION.

The Report of the clinical records has now come to a close so far as the mere statement of facts is concerned. It remains to indicate as succinctly as possible the conclusions which a careful study of the very large amount of evidence appears to warrant. The chief interest naturally centres in the facts as regard chloroform and ether, since, although much may well be said about nitrous oxide, the various mixtures and other anæsthetics, yet their use is comparatively small, and there appears to be no indication why it should in the future be extended.

The higher death-rate shown by our observations to be associated with the use of chloroform has to be looked at from various points of view before a just idea of its real significance can be obtained. The returns given in the tables which supply the number of times the various anæsthetics are used show that chloroform was employed some six times more frequently than ether. Unfortunately these figures are only approximately accurate, since no returns have reached us from the large London hospitals in which ether is so much employed, while they comprise returns from some parts of Scotland and from abroad, places where chloroform is used almost exclusively. An examination of the record of private practice indicates further that chloroform is used more frequently in that department of practice than is any other anæsthetic.

In hospital practice, then, a considerable number of chloroform deaths (say 6 to 1, although this is doubtless too favourable to chloroform) in excess of those under ether might only represent an equal mortality, the deaths being taken in relation with the actual number of times the anæsthetic is given. Again, the deaths recorded prior to 1864 are practically all from chloroform, as ether was but little employed in this country up to that date, so that until subsequently to that date no basis of comparison exists between the two anæsthetics. Taking, then, the figures of deaths between 1864 and 1892, exclusively, we have 596 deaths under chloroform and forty-five under ether, a proportion of 13 to 1—a mortality under chloroform at least double that under ether.

A similar result follows investigation of the untoward cases. But it has to be remembered that it is asserted, although we have had no evidence placed in our hands to show this, even in response to the special appeal of THE LANCET, that in Scotland an enormous number of administrations of chloroform is yearly made, while the casualties are few. Surgeon-Lieutenant-Colonel Lawrie's unique record of 45,000 cases of chloroform administrations without a death, with the statistics said to exist in Scotland, must tell greatly in favour of chloroform. Unhappily the experience of these observers is not borne out by that of others. On the other hand, it must be remembered that the employment of ether has only become at all general quite within the past few years. We are not yet able to learn, for example, whether any one skilled observer has been able to give ether to 45,000 persons without any fatality. Juilliard (Geneva), who, from a very large number of cases, gives the mortality under ether, puts it at one death in 14,087 administrations of ether, which is undoubtedly a very favourable

record for that anæsthetic; the same observer giving one death in 3257 administrations of chloroform—*i.e.*, 4 : 1.

Consideration of the cases we have given certainly seems to justify the following conclusions; at least many of the deaths under all kinds of anæsthetics seem to be inevitable, and arise from the depreciated vitality of the patients and appear not to be due specially to the anæsthetic. The operations in these cases were undertaken as a last resource, to give the individual, as it is said, every chance, and the stress of the anæsthetic, or a concurrent accident, such as the sucking into the windpipe of vomit when the patient was partly under the anæsthetic, gave the *coup de grâce*. Of these cases it can only be said that, the greatest care having been taken and an intelligent choice of the anæsthetic having been made, the medical man responsible for the administration has done his best, and if death results it is comparable to a patient succumbing to shock after the amputation of his thigh. Of course the choice of the anæsthetic is in such cases a matter of grave responsibility, and to this we shall revert later. Of other deaths it is urged that although they are reported as occurring just at the commencement of the inhalation of chloroform yet they are due to fright and not the drug. Dr. Snow[1] discusses this possible form of death, and cites cases which are certainly closely allied to some of those presented in this Report. Upon the other hand, it would appear that the chloroform might constitute a factor in this variety of casualty, as such accidents hardly ever, if indeed ever, occur when ether or nitrous oxide is given, a fact probably accounted for by the initially greater stimulation which these substances exert as compared with chloroform. Yet another category of cases falls into the class of preventable deaths—the fatality resulting from the inexpertness of the administrator or his carelessness, or arising from the use of an impure drug or an improper apparatus. In some cases we find the chloroform administration confided to persons wholly devoid of medical training (*cf.* case 280), such as workhouse attendants, domestic servants, &c., in others to those whose training was incomplete, such as medical students and dentists (not possessing a medical qualification). In others special note is made that the chloroform was found to be impure, having undergone decomposition or having been badly prepared.

Want of due precaution may in many of the cases have brought about a fatal result. Especially in dental operations the posture of the patient was not duly considered, and the patient was permitted to sit rather than to assume the recumbent position. The non-insistence on abstention from food for a sufficiently long time before the administration led in several cases to fatal results from the entrance of vomit into the air passages.

Relative Number of Deaths under Various Anæsthetics.

An attempt was made to ascertain what was the proportion of the deaths and untoward cases occurring under anæsthetics in relation to the frequency with which the various agents were employed. In the forms of inquiry sent out by THE LANCET, questions bearing upon these points were asked, and although many of the larger hospitals, especially those in the larger centres, such as London, Edinburgh, gave but a very imperfect return of their anæsthetic work, a great number of answers were received.

In the records of 18 provincial hospitals 18 deaths are reported under chloroform, and 4 under ether. The four deaths under ether took place in three institutions, and in two of those ether was used almost exclusively, while in the third it was employed somewhat more frequently than chloroform. One other death under ether is recorded in addition to the four above-mentioned, which occurred when the patient, having taken chloroform, was subsequently given ether as an inhalation to restore animation. Two deaths are further recorded when admixture of chloroform and ether was given.

In the Reports we publish, in the following London hospitals—Cancer, Charing Cross, Children's (Great Ormond-street), Children's (North-Eastern, Hackney-road), Dreadnought, Great Northern, Guy's, King's College, London, Lock, Metropolitan Free, Middlesex, Ophthalmic (Moorfields), Do. (Central London), Do. (South London), Do. (Westminster), Royal Free, St. Bartholomew's, St. George's, St. Mark's, St. Mary's, St. Peter's, St. Thomas's, Do. (Home), Samaritan, Seaman's (Greenwich), Surgical Home (Fitzroy-square), West London, Westminster, University College, Victoria for Children—144 deaths occurred under chloroform, and 17 under ether.

In other hospitals and infirmaries of England and Wales deaths under chloroform amounted to 125, under ether to 8, viz., Aldershot, United Bath, Bayston Hill, Blackburn, Birkenhead, Birmingham, Bootle, Bradford, Brighton (Sussex County), Do. Infirmary, Bristol, Broadmoor, Cambridge, Canterbury, Carlisle, Cardiff, Chester, Cirencester, Croydon, Derby, Devonport, Dudley, Exeter, Exmouth, Gloucester, Hanwell, Huddersfield, Hull, Ipswich, Kidderminster, Leeds, Leicester, Lincoln, Liverpool, Maidstone, Manchester, Newcastle, Northallerton, Northampton, Nottingham, Oxford, Peterborough, Preston, Reading, Shrewsbury, St. Helens, Sheffield, Sunderland, Staffordshire, Sudbury, Swansea, Taunton, Tavistock, Warley, Wolverhampton, York.

Scotland records 18 deaths under chloroform, none under ether, viz., in Aberdeen, Alloa, Edinburgh, Glasgow.

In the United States, 18 deaths occurred under chloroform and 11 under ether in the following hospitals: Chicago, Cook Co., Illinois, Louisville, New Jersey, New Orleans, New York, Philadelphia, San Francisco, St. Louis.

Six deaths were reported from Berlin hospitals—4 under chloroform, 1 when ether was given by the rectum, and 1 when Billroth's mixture was given. One death under chloroform is reported from Toulouse, but in our collected cases we find 13 deaths under chloroform are recorded from France. In all 322 deaths under chloroform and 37 under ether, a proportion of 8·7 : 1.

Number of Administrations of various Anæsthetics.

The importance of ascertaining the frequency with which the various anæsthetic agents are administered has been already insisted on more than once in this Report so that it will need no preliminary remarks to introduce the following statistics derived from various institutions throughout Great Britain, the Colonies, and abroad.

The first table (A) gives the number of times the various anæsthetics—chloroform, ether, the A.C.E. mixture, and others have been employed in various institutions in England and Wales, the Continent, the Colonies, United States, &c. It will be seen that although THE LANCET sent inquiries to all the British hospitals and to the leading hospitals abroad, only a comparatively small number were able to furnish reliable statistics. As, however, the facts tell for or against the various anæsthetics equally, no selection having been attempted, it is believed that the numbers obtained are of great value and advance the inquiry of this Report to a material extent.

The first column gives the name of the hospital, and the second approximates the number of times chloroform has been given during the last ten years (ending 1891), the third the number of times ether has been given, and the fourth the number of times the A.C.E. mixture, while the remaining anæsthetics are dealt with in a subsidiary table below (*a*). Surgeon-Lieutenant-Colonel Lawrie's cases, which he computes at 45,000 chloroform administrations, are not included in these statistics, nor are the reputed several thousand successful ether administrations unmarked by a fatality of the London anæsthetists.

Hospitals.—Number of Times the various Anæsthetics have been Used. (A)

Name of hospital.	Chloroform.	Ether.	A.C.E.
Co. Antrim Infirmary	—	—	320
Akyab General Infirmary and General Hospital	150	—	—
Ashton-under-Lyne District Infirmary	259	7	9
Belfast Hospital for Sick Children ...	1000	—	—
St. Bartholomew's Hospital, Chatham	224	1392	—
Infirmary and Dispensary, Bolton ...	243	4	8
Boston Lunatic Hospital	—	100	—
Bridport Cottage Hospital	400	—	—
Hospital for Sick Children, Brisbane, Queensland	350	—	—
General Hospital, Bristol	5950	50	—
Dispensary Hospital, Bury, Lancs. ...	420	30	—

[1] "On Chloroform," pp. 77, 209-212.

Name of hospital.	Chloroform.	Ether.	A.C.E.
Cancer Hospital, London	50	961	—
Cardiff Infirmary, Cardiff	252	316	—
Derbyshire General Infirmary	123	589	22
Devon and Exeter Hospital, Exeter	217	—	—
Dewsbury and District General Infirmary	245	11	11
General Infirmary and Dispensary, Doncaster	298	42	42
Foo-chow Native Hospital	800	—	—
Infirmary, St. George's-in-the-East	15	25	—
St. George's Hospital, Fulham-road	50	50	—
Kentucky Institution for Education and Training of Feeble-minded children	4	—	—
Kidderminster Infirmary and Children's Hospital	93	38	—
Lancaster Infirmary	296	4	—
Ledbury Cottage Hospital	3	69	—
North Lonsdale Hospital	325	—	—
County Louth Infirmary	120	60	80
St. Luke's Home for the Sick, Richmond, Virginia, U.S.A.	3000	200	—
Maine General Hospital, Portland, Maine	—	2461	—
Miller Hospital and Royal Kent Dispensary	120	8	22
Milton Abbas Cottage Hospital	2	—	—
Montrose Royal Infirmary	1000	—	—
Great Northern Central Hospital	257	—	—
Naval Hospital, Chelsea, Mass	5	95	—
North-Eastern Hospital for Children, Hackney-road, E.	3135	7	—
North-West London Hospital, Kentish Town, N.W.	864	96	—
Ophthalmic Hospital, Madras	4156	—	—
Royal London Ophthalmic Hospital, Moorfields	825	1507	58
Poplar and Stepney Sick Asylum	300	—	—
Roscommon County Infirmary	285	—	10
Royal Cornwall Infirmary, Truro	490	10	—
Royal Infirmary, Glasgow:			
Dr. Cameron	200	—	—
Dr. Dunlop, Wards 15, 23, 24	3380	120	—
Dr. Knox, Wards 27, 23, 19	1700	50	—
Dr. Lothian, Wards 13, 14, and Burn Wards	155	2	—
Dr. Macewen, Wards 21, 22, 29	3600	—	—
Dr. Morton	500	—	—
Dr. Newman, Throat ward	9	—	—
Dr. Stirton	450	50	—
Royston Hospital	—	—	—
Salisbury Infirmary	652	38	22
Salop Eye, Ear and Throat Hospital	107	—	—
Samaritan Hospital for Women, Belfast	1240	—	—
St. Saviour's Union Infirmary, East Dulwich Grove, S.E.	127	30	—
Sheffield Children's Hospital	2130	50	—
State Insane Asylum, Howard, Rhode Island, U.S.A.	—	10	—
State Almshouse, Howard Royal Infirmary, U.S.A.	—	25	2
State Workhouse, Howard Royal Infirmary, U.S.A.	—	12	—
State Prison, Howard Royal Infirmary, U.S.A.	—	20	—
(State) Reform School, Howard Royal Infirmary, U.S.A.	—	13	—
Sussex County Hospital, Brighton	671	119	551
United States Marine Hospital, Boston, Mass., U.S.A.	28	202	—
Victoria Infirmary, Verdin Park, Northwich, Cheshire	—	2	—
Hospitals for Insane, Melbourne, Victoria:			
Hospital for the Insane, Sunbury, Victoria	1	—	—
Hospital for the Insane, Ararat, Victoria	4	—	—
Lunatic Asylum, Kew, Victoria	—	—	—
Yarra Bend Asylum	4	—	1
Village Hospital, Hambrook, near Bristol	10	40	—
West of England Eye Infirmary, Exeter	237	237	—
Western Kentucky Lunatic Asylum	12	—	—
Westminster Hospital	48	165	—
Wirral Children's Hospital, Birkenhead	390	10	—
(Name not given)	442	262	—
Continental Hospitals:			
Chirurg. Universitäts Klinik in Bonn	—	—	—
Chirurg. Universitäts Klinik in Bostock und Johannes Hospital in Bonn	4200	—	—
Chirurgische Klinik in Krakau	—	—	—
Chirurgische Klinik in Königsburg	2000	—	—
Königl. Chirurg. Polyklinik und Kngl. Universit. Kinderklinik	550	—	—
Clinique Chirurgicale de l'école de Médecine de Toulouse	12,500	—	—
Chirurgische Universitäts Polyklinik in Berlin, Chir. Klinik in Giessen, Chir. Klinik in Zurich	64,693	9380	1163
Totals			

OTHER ANÆSTHETICS. (*a*)

Referring to other mixtures, we have been able to collect from the tables the following figures, which we now append for reference:

Nitrous-oxide and Ether in	708	cases
Ether and $CHCl_3$	„ 3913	„
Chloramyl	„ 100	„
Billroth's mixture	„ 1600	„

Of other anæsthetics we have statistics of the use of:

Methylene	in 648	cases
Ethidene chlor.	„ 14	„
Nitrous-oxide	„ 227	„

As an alternative anæsthetic, ether followed by $CHCl_3$ in 8075 cases which have come under our attention.

In table B the totals of these are given, showing the frequency, as far as these statistics indicate, with which the anæsthetics are given. Thus chloroform appears to be given 6·26 times as frequently as ether and nearly sixty times as frequently as the A.C.E. mixture. In table C the frequency with which chloroform and ether have been given is arranged so as to show how far the use of one or another anæsthetic is confined to the different countries. This table is very instructive. It shows, for one thing, that chloroform is given 4·10 times as frequently as ether, while in the United States the frequency of the use of these anæsthetics is about the same.

UNTOWARD CASES UNDER VARIOUS ANÆSTHETICS.

Similarly the following table presents in an accessible form a number of untoward cases occurring during the use of various anæsthetics:—

HOSPITALS.—RELATIVE NUMBER OF UNTOWARD CASES UNDER THE DIFFERENT ANÆTHESTICS, WITH TOTALS.

Name of hospital.	Chloroform.	Ether.	A.C.E.	Other mixtures.	Other anæsthetics.	Total.
Brisbane, Queensland: Hospital for Sick Children ...	1	—	—	—	—	1
Derbyshire General Hospital	2	—	—	—	—	2
General Infirmary and Dispensary, Blackburn	Several (? No.)	—	—	—	—	—
Goculdass Tejpal Native General Hospital, Bombay ...	Several (? No.)	—	—	—	—	—
Kent and Canterbury County Hospital	—	1	—	—	—	1
Lancaster Infirmary	Several (? No.)	—	—	—	—	—
Louth (County) Infirmary	4	—	—	—	—	4
Miller Hospital & Royal Kent Dispensary, Greenwich ...	1	—	1	—	—	2
North-Eastern Hospital for Children, Hackney-road, E...	—	—	—	—	—	—
Reigate and Redhill Cottage Hospital	—	—	2	—	—	2
Roscommon County Infirmary	1[1]	—	1[1]	—	—	2
Royal Infirmary, Glasgow: Wards, 15, 23, 24	—	2	—	—	—	2
Royston Hospital	—	—	—	Ether and chloroform 2	—	2
St. Saviour's Union Infirmary, East Dulwich-grove ...	6	2[2]	—	—	—	8
Salop Eye, Ear and Throat Hospital	—	—	—	—	Chlor-amyl 2	2
Sussex County Hospital, Brighton	3	—	2	—	—	5
Tunbridge Wells Eye and Ear Hospital	3	1	—	—	—	4
United States Marine Hospital, Boston, Mass.	—	6	—	—	—	6
Victoria: Hospitals for Insane, Melbourne						
Yarra Bend Asylum	—	1	1	—	—	2
Women (Hospital for), Nottingham	A few cases (? No.)	—	—	—	—	—
Continental Hospitals:						
Chirurgische Klinik in Krakau	—	—	—	Billroth's mixture 1	—	1
Clinique Chirurgicale de l'Ecole de Médecine de Toulouse	3	—	—	—	—	3
Totals	24	13	7	3	2	49

UNTOWARD CASES.

Chloroform	24
Ether	13
A.C.E.	7
Ether and $ChCl_3$	2
Billroth's Mixture	1
Chlor-amyl	2
Total	49

TABLE B.

TOTAL OF COMPARATIVE NUMBER OF TIMES DIFFERENT ANÆSTHETICS HAVE BEEN GIVEN.

Chloroform	64,693			
Ether	9,380			
A.C.E.	1,163			
Other mixtures. $ChCl_3$ and ether	15			
Other mixtures. Ether and $ChCl_3$	3898			
Other mixtures. Nitrous oxide and ether	708	... ...	6,321	
Other mixtures. Chlor-amyl	100			
Other mixtures. Billroth's mixture ...	1600			
Other anæsthetics. Bichl. methylene	677			
Other anæsthetics. Nitrous oxide	227			
Other anæsthetics. Ethidene Chloride	14			
Other anæsthetics. Cocaine	3	...	921	
$ChCl_3$, followed by ether	8			
Ether, followed by $ChCl_3$	8285			
$ChCl_3$, followed by ether or *vice versâ*	46	...	8400	
(Not specified)	61			

TABLE C.

TABLE SHOWING FREQUENCY OF USE OF ANÆSTHETICS IN VARIOUS COUNTRIES.

—	$ChCl_3$.	Ether.	A.C.E.	$ChCl_3$ and E.	E. and $CHCl_3$.	Nitrous ox. and E.	Billroth's mixture.	Chlor-amyl.	Bichl. meth.	Nitr. oxide.	Cocaine.	Ethidene chloride.	$CHCl_3$ followed by ether.	E. followed by $CHCl_3$.	$CHCl_3$ followed by E. or *vice versâ*.[3]	Name of anæsthetic alternated not given.
England	22,596	5402	740	15	3846	708	—	100	594	227	—	—	8	235	46	61
Wales	252	316	—	—	52	—	—	—	—	—	—	—	—	—	—	—
Scotland	10,994	222	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Ireland	2,645	60	420	—	—	—	—	—	60	—	—	—	—	—	—	—
France	550	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Germany and Switzerland ...	18,700	—	—	—	—	—	—	—	—	—	—	—	—	8050	—	—
Poland	—	—	—	—	—	—	1600	—	—	—	—	—	—	—	—	—
India	4,156	—	—	—	—	—	—	—	23	—	—	14	—	—	—	—
Burmah	150	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
China	800	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Australia	359	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—
United States ...	3,049	3138	2	—	—	—	—	—	—	—	3	—	—	—	—	—
(No name given) ...	442	262	—	—	—	—	—	—	—	—	—	—	—	—	—	—

[1] In same patient at four days' interval. [2] In same patient on separate occasions.
[3] These cases comprise those in which ether and chloroform were given alternately.

STATISTICS FROM PRIVATE PRACTICE.

In response to the Inquiry Forms sent out by THE LANCET, much valuable information was obtained bearing upon (1) the frequency with which the various anæsthetics are used in private practice; (2) the methods most in vogue; (3) the kind of operations undertaken; (4) the deaths under the anæsthetics; (5) the "untoward cases" met with under the anæsthetic. As the names of those who supplied the information were given in confidence, they have been replaced by numbers.

No.	Anæsthetic and method used.	Average number of cases per annum.	Kind of operations for which used.	Number of deaths.	Number of dangerous cases.
1	Chloroform (on lint).	—	——	—	——
2	" "	240	Ligature of external iliac.	...	1
	Ether (Clover).	20	Surgical cases.	...	No casualties; several times seen respiration stop; has rallied patient.
3	Chloroform (on lint).	...	Midwifery.	—	——
	Chloroform (Clover's inhaler).	45	Ovariotomy (pelvic), midwifery.	...	More than one case.
	Methylene (Junker's inhaler).	—	——	—	——
4	Chloroform (lint).	117	General operations.	—	——
	A.C.E.	...	For wound of scrotum.	...	2
	Chloroform.	...	Circumcision.	...	
5	Chloroform (Skinner's frame or lint).	50	General and midwifery.	—	——
	Chloroform (Skinner's frame).	...	Removal of dead fœtus.	...	
	" " "	...	Scirrhus of breast.	...	6
	" " "	...	Pus in joint.	...	
	" " "	...	Fibroma of uterus.	...	
	" " "	...	Ruptured gall-bladder.	...	
	" " "	...	Cripple (amputation).	...	
6	Chloroform (on towel).	400	Operations on children.	—	——
	" "	...	Circumcision.	...	More than one (infants and old man).
	" "	...	Amputation of Penis.	...	
7	Chloroform or A.C.E. (Stevens' inhaler).	?	——	—	——
	Chloroform (Stevens' inhaler).	...	Removal of tumour of breast.	...	2
	" " "	...	Foot torn off by machinery.	...	
8	Chloroform (on lint).	?	——	—	——
	" "	...	Diseased bone.	—	——
9	Chloroform (Skinner's inhaler).	280	——	—	——
	Ether (Clover's inhaler).	...	.....	...	.....
	Bichloride of methylene (Junker's inhaler).	...	.....	...	.....
	Ether (Clover's inhaler).	...	.....	...	
	" " "	...	Amputation of gangrenous toe.	1	2
10	Chloroform.	...	.....	...	
	Chloroform (Skinner's inhaler or towel).	1882-82, 500; subsequently 25.	Midwifery, reducing dislocations.	...	——
	Chloroform (towel).		Sounding for stone.	—	1
11	Chloroform (Skinner's inhaler).	...	Removal of carious finger.	1	——
	Chloroform (towel).	50	General operations.	—	——
	Methylene. ? method.		Ovariotomy.	...	Several cases.
12	Chloroform $\frac{3}{4}$; Ether $\frac{1}{4}$.	? 6	——	—	——
	Chloroform and ether (folded napkin).	...	Midwifery (forceps).	...	1
13	Chloroform (Skinner's inhaler).	?	Dentistry and minor operations.	—	——
	" " "	...	Forcible catheterism for urethral stricture.	1	——
14	Chloroform or A.C.E. [sometimes] (handkerchief).	35	Chiefly midwifery.	—	——
	Chloroform (on handkerchief).	...	? For tumour.	...	1
	" "	...	"	...	6 9
	" "	...	.....	...	2
	" "	...	.....	...	Several other cases.
	" "	—	——	—	(Number not given).
15	Chloroform (towel and mask).	12	Midwifery and minor operations.	—	——
	Chloroform.	...	Removal of fatty tumour.	—	——
	Chloroform (on towel).	...	?	...	More than one.
	Chloroform (wire inhaler with flannel).	50	Amputations and dislocations.	—	——
16	Chloroform (Skinner's mask).	...	For phimosis.	...	1
17	Ether (Clover's), Chloroform (lint).	150	General operations.	—	——
	Chloroform (on lint).	...	Exploratory examination of hip disease.	...	2
18	Ether with nitrous oxide (Clover's inhaler).	400	Midwifery and abdominal sections.	—	——
	Ether (Clover's inhaler).	...	Removal of large thyroid	2	——
	Gas and ether.	...	Lumbar colotomy.		
	Ether (Clover's inhaler).	...	.....	...	A few.
19	Ether (Clover's apparatus).	62	General operations and teeth extractions.	...	Several cases.
	Chloroform.	—	——	—	——
20	Chloroform (handkerchief or felt cone).	30	General operations and midwifery.	—	——
21	Chloroform (on lint).	20	Midwifery and general operations.	—	——
22	Chloroform (Junker and lint).	45	Dental midwifery (occasionally) and general operations.	—	——
23	Chloroform (on lint).	400	Ophthalmic operations.	—	——
	" "	...	?	...	Several.
	" "	...	Entropion.	1	——
24	Chloroform (handkerchief).	60 or 70	Midwifery and small operations.	—	——
	Chloroform and methylic alcohol.	...	Teeth extracted.	...	1
25	Chloroform (Junker's inhaler).	...	Midwifery, surgical, dental.	—	——
	Chloroform (Snow's inhaler).	...	For necrosis of tibia.	...	1

STATISTICS FROM PRIVATE PRACTICE—*continued.*

No.	Anæsthetic and method used.	Average number of cases per annum.	Kind of operations for which used.	Number of deaths.	Number of dangerous cases.
26	A.C.E. mixture (Skinner's inhaler).	...	Midwifery (rarely), *never* for dislocations, reduction of fractures, &c.	—	—
	Chloroform (on lint).	...	Tenotomy for strabismus.	...	3
	" "	...	Scirrhus of breast.	...	
	" "	...	For cancer of breast.	...	
27	Ether (Clover's inhaler).	65	General operations.	—	—
	Chloroform (lint).	...	——	—	—
	Ether at first, then chloroform.	...	Blind fistula.	...	1
28	Chloroform (handkerchief or lint).	25	Midwifery; general operations.	—	—
	Chloroform (on lint).	...	For hæmorrhoids.	...	1
29	Chloroform or nitrous oxide (lint).	175	All cases needing it; parturitions.	—	—
	" " " "	...	.....	...	A few cases; No. not given
30	Chloroform [children] (cone); A.C.E. [adults] (cone)	200	Midwifery and general operations.	—	—
	A.C.E. mixture (in cone).	...	For vascular growth of urethra.	...	2
	" " "	...	Hæmorrhoids.	...	
31	Chloroform and ether; chloroform (pulmonary or renal disease).	750	Gynæcological.	—	—
	Methylene.	...	Gynæcological.	2	—
	Ether (Ormsby's inhaler).	...	.....		
32	Chloroform.	...	Gynæcological.	1	—
	Ether.	...	For removal of sloughing fibroid.	1	—
33	Ether (Clover's inhaler).	100	Surgical operations (minor).	—	—
	Chloroform (Skinner's inhaler).	...	Dislocations of shoulder.	1	—
34	Ether (Clover's inhaler).	...	Surgical cases.[1]	—	—
	" " "	...	Strangulating hernia.	1	—
35	" " "	...	Removal of sarcoma from side of chest.	1	—
	Ether (morphia).	...	Excision of jaw.	1	—
36	Ether (Clover's smaller inhaler).	300	General operations.	—	—
	Chloroform.	...	Amputation of finger.	1	—
37	"	...	Nævus (infant's head).	—	—
	"	...	——	—	—
38	Ether (Clover's inhaler) for cases over twelve years.	Between 300 and 400.	Surgical.	—	—
	Chloroform (lint).	...	Midwifery.	—	—
	" "	...	Forcibly straightening talipes equinovarus.	...	1
	" "	...	Fracture of leg and wounds on face.	...	1
	" "	...	For re-introduction of catheter into ruptured urethra.	...	1
	Ether (Clover's smaller inhaler).	...	For abscess in mouth with carious tooth.	...	1[1]
	" " " "	...	For opening pyæmic abscess in shoulder-joint.	...	1[1]
39	Chloroform.	271	All kinds of midwifery.	—	—
	Chloroform (wire frame).	—	Tracheotomy for cancer of larynx.	1	—
40	Chloroform.	...	Pyothorax.	1	—
	"	...	Cystotomy, for cystitis due to bilharzia hæmatobia.	...	1
41	Chloroform (on towel).	20 (about).	General operations, occasionally midwifery.	—	—
	" "	...	Pain from stone in ureter (drunkard).	1	—
	" "	...	Puerperal convulsions.	1	—
42	Chloroform (Skinner's mask), rarely.	20	Midwifery.	...	None.
	Ether (cone or towel), more often.	—	——	—	—
	Ether and chloroform (Clover's smaller apparatus), usually (4 pts. to 1 pt.).	...	General operations.	—	—
	Ether and chloroform (4 pts. to 1 pt.).	—	Strangulated umbilical hernia, severe.	1	—
43	Methylene (leather case with towel).	61	General operations and teeth.	—	—
	Chloroform.	...	Pyæmia.	1	—
	Methylene (leather case with towel).	...	.....	...	2 (about).
44	A.C.E., 1, 2, 3 parts (folded lint).	50 to 100	General operations and midwifery.	—	—
	(?)	...	.....	...	1
45	Chloroform (towel or handkerchief).	300	Midwifery and operations, important and minor.	—	—
46	Chloroform (towel or handkerchief).	...	.....	...	A very few (number not given).
47	Chloroform (twenty years) (flannel over frame).	...	Surgical operations, reduction of dislocations, hernia, midwifery, and for diagnosis in abdominal conditions.	—	—
	A.C.E. mixture (flannel over frame).	...		—	—
	Ether (Clover's inhaler), sometimes.	...		—	—
48	Chloroform.	...	(?)	...	2
	A.C.E. mixture.	...	(?)	...	
	(?)	...	(?)	...	General (number not given).
49	Chloroform (Lister's method, towel).	16	General operations.	—	—

[1] Danger due to secondary causes rather than to anæsthetic.

STATISTICS FROM PRIVATE PRACTICE—*continued.*

No.	Anæsthetic and method used.	Average number of cases per annum.	Kind of operations for which used.	Number of deaths.	Number of dangerous cases.
50	Chloroform (towel).	...	External urethrotomy.	1	—
51	Chloroform (towel or mask of lint).	...	(?)	...	6
52	Chloroform (lint or frame with flannel).	...	All cases, except midwifery.	—	—
	Ether (Clover's inhaler).	...	———	—	—
53	Chloroform (towel and Skinner's inhaler).	25	General operations and midwifery.	—	—
	A.C.E. mixture (muzzle inhaler).	—	———	—	—
54	Ether and chloroform [equal parts] (on towel).	15	General operations and midwifery.	—	—
55	Squibb's ether and chloroform (open-wove flannel on frame).	200	General surgery, obstetrics and gynæcology.	—	—
56	Ether (cone).	100	General surgery and midwifery.	—	—
	" "	...	(?)	...	Patient etherises badly whenever obstructive dyspnœa is present.
57	Chloroform and ether [equal parts] (lint and cone).	50	Tooth extraction and midwifery.	—	—
58	Chloroform (cone-shaped towel).	50	Surgical, dental and obstetrics.	—	—
59	Chloroform (towel).	...	Extraction of teeth.	...	Some (number not given).
60	Chloroform (towel folded or single).	100	General operations.	—	—
61	Chloroform (handkerchief).	50	Minor operations and midwifery.	—	—
	Ether (cone and towel).	...	Surgical cases.	—	—
62	Ether (towel cone).	...	Removal of ovarian cyst without adhesions.	1	—
63	Cocaine.	...	Eye operations: small growths.	—	—
	Chloroform (towel or handkerchief).	130	Circumcision, rectal and uterine polypi, hæmorrhoids, teeth, tracheotomy, pharyngeal growths, abscesses, dilatation of cervical canals, rectal ulcers, hare-lip, &c.	—	—
	Chloroform (on towel).	...	Circumcision.	...	2
	Chloroform (on handkerchief).	...	Dilatation of cervical canal.	...	
64	Chloroform (folded napkin).	(?)	.....	—	—
	Ether.	...	Failure of heart — Midwifery.	—	—
	Chloroform (on napkin).	...	For cataract.	...	2
	Methylated chloroform (on napkin).	...	For reduction of dislocation.	...	
65	Chloroform (sponge in cage with mouthpiece).	220, 1850-52. 15 since 1852.	General cases and midwifery.	—	—
66	Chloroform (folded handkerchief, Junker's inhaler, lint).	150	All surgical operations except cataract and iridectomy; midwifery three times.	—	—
	Chloroform (Junker's inhaler).	...	Removal of enlarged and ulcerated scrofulous glands of neck.	...	1
	Chloroform (folded lint).	...	Lateral lithotomy.	...	1
	Chloroform (Junker's inhaler).	...	" "	...	1
	" " "	...	Excision of epithelial cancer from lip.	...	1
67	Chloroform (towel or lint).	6	Operations and midwifery.	—	—
68	Chloroform (towel or small flannel inhaler).	20	General operations; midwifery (occasional).	—	—
69	Chloroform.	...	For opening knee-joint for acute suppuration.	...	1
70	Chloroform (Esmarch's inhaler).	300	Midwifery, diseases of women, laparotomies, &c.	—	—
	" " "	...	Fistula in ano.	...	1
	" " "	—	(?)	...	Others less serious (number not given).
71	Chloroform *only* (small towel).	300	General surgery, all cases operated.	—	—
72	Chloroform (small towel).	...	(?)	...	4
73	Chloroform (on towel held over face so as to allow administrator to see face without removing towel).	(?)	All cases; midwifery (instrumental labours).	—	—
74	Chloroform (towel).	...	For exploratory incision and removal of sarcomatous facial tumour.	1	—
75	Chloroform (folded lint or on lint expanded in wire).	129	All major operations.	—	—
	Cocaine [eye cases].	—	———	—	—
	Chloroform (lint).	...	Amputation (large).	...	
	" "	...	Large tumour of jaw.	...	4
	" "	...	Lithotomy.	...	
	" "	...	Tumour of jaw.	...	
76	Chloroform, generally with morphia hypodermically (formerly cup inhaler, now flannel on wire frame; Junker's apparatus [midwifery]).	500 (formerly), 100 (now).	Surgical operations and midwifery.	—	—
	Chloroform.	...	(?)	...	Several cases.
77	Chloroform (formerly).	12	———	—	—
	A.C.E. mixture (cone of spongiopiline, lint inside).	—	———	—	—
	Chloroform (cone with lint in it).	...	Reduction of dislocation of little finger.	...	1
78	Chloroform (handkerchief or lint).	...	General operations and instrumental midwifery.	—	—

STATISTICS FROM PRIVATE PRACTICE—*continued.*

No.	Anæsthetic and method used.	Average number of cases per annum.	Kind of operations for which used.	Number of deaths.	Number of dangerous cases.
79	Chloroform (Skinner's inhaler).	160	General operations and midwifery.	—	—
	Ether [occasionally] (Clover's apparatus).	—	——	—	—
80	A.C.E. mixture (folded napkin).	45	General operations chiefly.	—	—
81	Ether Chloroform [midwifery] } American inhaler.	55	Reduction of dislocations, excisions, midwifery.	—	—
82	Chloroform (handkerchief), and giving patient plenty of air.	45	General operations and midwifery.	—	—
83	(?)	...	.....	...	Several cases.
84	Chloroform (napkin or handkerchief).	6	Midwifery and minor operations.	—	—
85	Ether (Ormsby's inhaler).	75	Midwifery, simple and capital operations; abdominal sections.	—	—
	Chloroform [midwifery] (Ormsby's inhaler).	—	——	—	—
86	Chloroform [1867–72] (wire mask).	—	——	—	—
	Ether [1873–89] (cone towel).	70	——	—	—
	Ether and chloroform (4 parts to 1 part). [1886–89] (Clover's small inhaler).	—	——	—	—
	Chloroform (wire mask).	...	Removal of hæmorrhoids.	...	2
	" " "	...	Removal of breast.	...	

The deaths reported in the foregoing tables amount to 11 under chloroform, and 7 under ether, 3 under methylene, and 1 under another mixture (ether 4, chloroform 1). We are further told that 71 more or less dangerous cases occurred under chloroform, but death was avoided, in 3 when ether was given, in 2 when ether was first given and chloroform afterwards, in 5 when the A.C.E. mixture was employed, and several observers speak of "several" cases of dangers under chloroform and "several" under ether. Chloroform appears to be most frequently employed in general practice.

It would, therefore, appear that in England and Wales chloroform is responsible for a larger number of deaths and of dangerous cases than is ether. In India and the Tropics generally, ether is not used, and chloroform is very largely employed with a very low death-rate; on the Continent, the death-rate is in favour of ether, but it is at present difficult to gauge the relative frequency with which the two substances are employed. In the United States ether is widely used, but here again we cannot estimate the number of times that anæsthetics in general and chloroform in particular are used with sufficient accuracy to draw conclusions. In Scotland, as we have above stated, there is no reliable evidence of how many deaths under chloroform really occur, although it is believed that deaths are fairly frequent. What, then, are the causes of such deaths? It has been pointed out above that a considerable number of deaths occurring when chloroform or when ether is employed are quite unpreventable, as Cases 128, 233, 274, and that many others are undoubtedly due to inexpert administration leading to overdosage; but of the residuum, what information can be gained as to the manner of the dying, and the prevention of fatalities?

Of the usually assigned predisposing causes of death under anæsthetics, our records appear to us to demonstrate that chronic alcoholism, the cancerous cachexia, emphysema, chronic renal disease, and cardiac valvular disease, cannot be regarded as playing any important part. Fatty changes in the heart substance are frequently reported in the necropsies we have published, but it must be remembered that these are, as a rule, merely the register of a generally deteriorated and depreciated organism.

THE DETERMINING CAUSES OF DEATH UNDER CHLOROFORM.

The larger proportion of deaths are reported as having resulted from initial heart failure, in opposition to the view to which the physiological researches of the Hyderabad Commission have led. That these conflicting views are reconcilable seems to us to be possible, at least in many cases. The reporters of numerous cases refer to *failure of the pulse* as occurring before that of respiration, and it is undoubtedly true that although the pulse does fail, yet the actual heart action continues for some time after pulse failure. This explanation, however, seems hardly to apply to those cases of *sudden death* which occur at the commencement of chloroform anæsthesia, nor can these deaths be explained, as is pointed out above, as being due to fright, and not to the anæsthetic. The view enunciated by the Committee of the Royal Medical and Chirurgical Society is thus expressed: "The strongest doses of chloroform vapour, when admitted freely into the lungs, destroy animal life by arresting the action of the heart."[1]

And again, "By moderate doses of chloroform the heart's action is much weakened for some time before death ensues; respiration generally, but not invariably, ceases before the action of the heart, and death is due both to the failure of the heart's action and to that of the respiratory function.[2]

When the wide differences in the methods adopted in giving the anæsthetic are considered, there seems little to be said in favour of one method over another, provided the all-important condition of due dilution of the chloroform vapour is insisted upon. However, dropping chloroform upon lint, when done carelessly and at haphazard, as appears to have occurred in some cases reported, is undoubtedly dangerous. To achieve this dilution, probably no better plan can be adopted than that of using a simple linen cap, such as Surgeon-Lieutenant-Colonel Lawrie has employed with such success. The main point borne in upon us is, we submit, that more depends upon the person giving the anæsthetic than upon the method he adopts.

In its exhibition these remarks do not, however, apply with equal force to ether, owing to the lighter character of its vapour. The causation of ether deaths is, in by far the majority of cases, asphyxial, and due either to careless administration or to mechanical obstruction to respiration—*e.g.*, mucus, muco-pus, &c., or more rarely to paralysis of the respiratory centre, in obstructive pulmonary conditions, such as were present in some of the patients whose deaths under ether we report. Ether should be given with the utmost caution, and in very small quantity. There is evidence that such was not always the plan adopted, so that some at least of these deaths were due to imperfections in the use of the anæsthetic. The experience since the formulation of the Royal Medical and Chirurgical Society's Report (1864) has shown that the use of an open method, the employment of a towel, or cone, or sponge is not the best plan of using ether. When one of the modern inhalers is skilfully used, although deaths are few, yet they occur both immediately and remotely. Of the former we have already spoken; of the latter, it is noticeable that in the necropsies after ether deaths the lesions revealed are not, as a rule, those which are generally said to be associated with ether toxæmia—viz., pulmonary and renal diseases.

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[1] Report of the Committee Appointed by the Royal Medical and Chirurgical Society. London: Adlard. 1864. Page 23.

[2] *Ibid.*

It lies outside the province of the present Report to theorise, or to attempt to reconcile the teaching of physiological research with clinical observation, but it may here be indicated that very valuable evidence is presented to us by the cases above cited upon the points which have been, and perhaps still are, under open debate amongst both physiologists and clinicians. The strength of the vapour of chloroform determines very largely the manifestations of the phenomena attendant upon the inception of danger, or ultimate death from that cause. Thus, in many cases "deep gasps" are described, which undoubtedly led to the intaking of an overdose, and sudden cessation of cardiac and respiratory action followed an overpowering dose given as a concentrated vapour, even although the actual quantity taken was small (*cf.* Case 159).

In other cases "struggling" led to the same peril, as well as the additional one of the imposition of a severe strain upon the heart by fixation of the chest walls, and muscular pressure upon the systemic veins (*cf.* Cases 19, 23, 25, 43, &c.).

In other cases a warning seems to have been given by "stertorous breathing" (*cf.* Cases 24, 44, 53, 61, 71, 77, &c.), and these appear to belong to the class in which a slightly too high percentage of vapour is inhaled, or, what amounts to the same thing, the expiration of the chloroform [output from the blood] was hampered, while the inspiration was continued.

In connection with many of the cases reported above, the following extract from the Royal Medical and Chirurgical Society's Report, from which we have already quoted, puts the matter very plainly. It is said: ". . . . it must not be supposed that in all the cases of death by syncope a percentage of the chloroform vapour had been administered which was inevitably dangerous. In the experiments upon animals some died by syncope while inhaling much diluted vapour, and in every case the force of the heart's action was much reduced for some time before death. If, as usually happened in the experiments on animals with the diluted chloroform vapour, the respiration gradually failed, whilst the heart continued to beat with appreciable force, this constituted a sufficient warning of approaching death, and upon the withdrawal of the vapour recovery at once ensued. Few if any deaths have taken place in this manner in the human subject."

"If, on the other hand (as sometimes, but rarely, happened), there was sudden failure of the heart's action, the breathing still continuing, death supervened, practically without warning. This mode of death, which was exceptional in the experiments on animals, is the most frequent in the human subject." The experience of the Hyderabad Commission gave no evidence of this form of death in their experiments upon the lower animals, and Surgeon Lieutenant-Colonel Lawrie had not in his Indian practice met with an instance among human beings. In the cases we have reported it would appear that such deaths do really occur in temperate countries, and with frequency.

The evidence in favour of heart failure occurring under ether, seems to us to be unsatisfactory, for, when syncope is said to have occurred, it appears that the violence of the struggling was sufficient to have led mechanically to heart failure.

As to death occurring during partial anæsthesia from surgical shock we submit there is much evidence in the cases we have cited above to prove that such an accident is frequent.

A careful study of the cases shows that both under chloroform, ether, nitrous oxide, and other agents, several deaths have resulted from the operation having been commenced before complete anæsthesia had been obtained, or when the patient was allowed to resume consciousness before the operation was completed (*cf.* Cases 28, 50, 66, 166, and many others).

The grave dangers of allowing respiration to be hampered during the administration of an anæsthetic are shown in cases of postures other than the supine, changing of posture from the supine, in empyema, and other causes (*cf.* Cases 36, 154, 200, 454, 472, 474, 480).

The consideration of the nature of the operation in progress when death from an anæsthetic occurred goes to show, it is believed, that the gravity of the surgical procedure is by no means a criterion of the amount of danger as far as the anæsthetic is concerned. In the larger number of fatalites the operation was of a trifling nature, and this fact suggests the possibility, in some of this number, of less care and precaution, and individual attention to the anæsthetic, than are associated with the graver operative procedures.

It has long been held and taught that parturient women and young children were almost exempt from the perils of chloroform, but the reports before us, and those supplied by the tables derived from medical men in private practice, appear to negative this supposed immunity.

It might be hoped that the large amount of information afforded by our reports on the subject of measures adopted for resuscitation would enable us to indicate some very definite and hopeful measures the adoption of which would render the chances of reviving animation at least probable. In this we are disappointed. The measures adopted in the "untoward cases" appear to have been followed out in the fatal ones. The Report of the Hyderabad Commission, as well as that of the Committee of the Royal Medical and Chirurgical Society, have insisted that the chance of resuscitation depends upon the promptitude with which the restorative measures are adopted. Possibly herein, in some instances at least, lies the reason of success in one case and of failure in another. The result may depend upon an earlier appreciation of danger and greater celerity in adopting measures for resuscitation. It should be remembered that even the best restorative measures are dangerous unless wisely applied. Probably artificial respiration by the combined methods of Sylvester and Howard with the usual cardiac stimulants (when any concurrent heart failure exists) are the only measures which need be adopted in ordinary cases of chloroform overdosage. Inversion when circulatory weakness exists appears to be valuable, but to be dangerous in all asphyxial conditions. With regard to the employment of the various alkaloids or sedatives in conjunction with the general anæsthetics, it is felt that sufficient eveidence has not been placed at the disposal of THE LANCET for the matter to be dealt with in this Report. The employment of morphine in combination with chloroform, which Surgeon-Lieutenant-Colonel Lawrie has found of value, is lauded by many, but, on the other hand, there are others who have found respiratory dangers to be more frequent when morphine is used.

Cocaine, &c.—It has been found quite impossible to deal with the various materials used in the production of local anæsthesia, and although there have been received numerous reports of deaths under cocaine they have for the above reason been omitted.

With regard to the various mixtures of general anæsthetics it must be admitted that, with perhaps the exception of the A.C.E. mixture, their use is so exceptional that there is insufficient evidence in their favour to warrant any general commendation or the reverse. Of nitrous oxide but few cases of deaths or dangers are reported, and when it is remembered that this anæsthetic is used more frequently than any other, and with fewer precautions, and as a rule with no special preparation of the patient as regards food, &c., its safety seems to be amply proved. Indeed, an examination of the reported deaths shows that the gas could hardly have been held responsible for them. As, however, shock plays so important a part in the causation of deaths under anæsthetics, it is most important that full anæsthesia be obtained when this as when other agents are employed.

Of the other anæsthetics comprised in this Report little need be said; the mortality under them is too high for their use, under present conditions, to be recommended.

In conclusion, we subjoin the following deductions which Dr. Dudley Buxton thinks may be drawn from the Report:

1. That the death-rate under anæsthetics heretofore has been unduly high, and may, by improved methods and greater care, be lowered.

2. That ether when properly given from an inhaler, permitting graduation of the strength of the vapour, is the safest anæsthetic in temperate climes for general surgery.

3. That nitrous oxide gas should be employed for minor surgery, and should replace chloroform in dental surgery.

4. That chloroform, when given by a carefully trained person, is a comparatively safe body, but is not, in any case, wholly devoid of risk.

5. That no age or nation is free from danger under anæsthetics.

6. That the perils of anæsthetics, however slight, demand that the undivided attention of a duly qualified and trained medical man should be given to the administration of the anæsthetic.